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EDITORIAL.

WE are glad to be able to present our readers with such a series of practical articles as will be found in the following pages of this number. The papers by Messrs. Parsons, Huested, Holmes, and Bedford are of especial value, and should be read and remembered by every pharmacist. The paper on pill-coatings and the simple apparatus therein described needs no commendation. The one on Tinctures of Fresh Herbs relates to a subject which is worthy of much more attention than it has received of late years. It may also be noted that the department of Notes and Queries is particularly full, over fifty items of special interest being embraced in its columns.

Our reporter in Ithaca has given a good account of the recent meeting of the New York State Pharmaceutical Association, at which, though the attendance was by no means as large as might reasonably be expected, good work was done. The exhibition was noticeable for the care that had been exercised in choosing and arranging the articles displayed. Photographs of the various exhibits which have been received show increasing excellence in almost every instance.

Bentley and Trimen's Medicinal Plants.*

ALTHOUGH the source from whence we obtained the illustration of "Jequirity," published in the foregoing number, was mentioned in a foot-note to the text, it was, by oversight, omitted on the plate itself. We use this occasion for acknowledgment, and also for saying that the value of this noble work does not reside alone in its beautiful illustrations (over three hundred in number). The text gives a great variety of information from recent sources, and not often met with in the usual works for reference.

Purissimus.

As a further illustration of the remarks made by us in a preceding number (page 191) on the misuse of the above distinguishing adjective in modern price-lists of dealers in drugs and chemicals, some remarks by Mr. Oscar Heller in the *Pharm. Zeitung* of May 12th may be alluded to here. During his experience as pharmaceutical and chemical expert of a wholesale house he had never met with any citric acid which was absolutely pure, either lead and sulphate of calcium, or at least traces of the latter being always found present. He doubts, in fact, whether an absolutely pure acid could be put on the market, inasmuch as it is particularly difficult to avoid the presence of at least traces of sulphuric acid. [His experience, in this respect, coincides with that of ourselves and others on this side of the Atlantic.] He then alludes to the fact that the most prominent drug firm in Germany quotes a quality of citric acid which is distinguished as "purissimum," and which itself is contaminated with a trace of lead, the presence of which must have been known to the firm. He ascribes the misuse of the term to a growing use of terms of exaggeration in the commercial world, so much so that it would be unfair to imply wilful deceit when such terms are used in their modern "figurative sense." Logically, of course, "purissimus" would imply that the substance is free from every impurity, that it is, in fact, 100 per cent; yet, as this is practically impossible, and as some customers would be scared away if the article were quoted as

Acidum citricum (recrystallised; only traces of lead and sulphuric acid),

it has become fashion to designate this highest *commercial* quality as "purissimum." In fact "purissimus" is not always the superlative, "the purest," but very frequently only the elative, "very pure." And it would be a consolation to know that it were in all cases synonymous with "as pure as it can be made;" the fact, however, is that it often is only a version for "as pure as we can *afford* to make it."

Frost-Bite Formulas.—One of our contemporaries which reaches us while the thermometer is at 88° and upwards, gives a variety of formulas for frost-bites. Not quite so refreshing as something made with iced "soda" and a "stick," but suggestive of cooler seasons, and helpful in its way.

* Philadelphia, 1880: P. Blakiston, Son & Co.

What is the Composition of the Laudanum Generally Dispensed in this State?*

BY HENRY B. PARSONS, OF NEW YORK.

THE interesting discussion of the laudanum question, at last year's meeting of this Association, led your "Committee on Adulterations, etc.," to believe that the examination of samples of laudanum from different parts of the State might be of value.

Accordingly samples were obtained by one member of your committee, who has kept a record of their sources. These samples were then all poured into plain four ounce bottles and marked only with numbers. The analyst has not seen this list and does not know from whom the samples were obtained.

The samples were gathered before the new Pharmacopœia had been issued, hence they must be judged by the standards of the U. S. Pharmacopœia of 1870. These samples, numbering forty-seven (one broken bottle) were received for analysis on November 16th, 1882.

These assays have been made as follows:

Examination of Laudanum.

1. The specific gravity was determined by weighing in an accurately adjusted specific gravity bottle at a temperature between 15° and 20° C. (59° to 68° F.)

2. The solid residue was determined by evaporating a known volume of the laudanum to dryness in a small dish containing sand, the final drying to a constant weight being conducted in an air bath heated from 90° to 100° C. (196° to 212° F.)

3. Morphine was estimated as follows:

75 cubic centimeters of the laudanum were evaporated to dryness on the water bath to remove alcohol. On cooling, there were added 75 cubic centimeters of water, together with three grams of powdered, water-slaked lime. Thorough admixture was attained by trituration, at intervals, during half an hour. The morphine was thus readily dissolved. The liquid was then filtered from the meconate of lime and other insoluble substancess and 50 cubic centimeters of the filtrate (representing 50 cubic centimeters of the original laudanum) were placed in an assay flask for further treatment.

To the above mentioned liquid were added, in succession,

Alcohol..... 5 cubic centimeters
Ether.....25 " "
Ammonium chloride..... 3 grams,

and the mixture was well shaken in the corked flask several times during the first half-hour.

The soluble compound of lime and morphine was broken up by the addition of the ammonium chloride, the result being the liberation of the morphine, and of free ammonia, and the production of soluble calcium chloride.

The free morphine was nearly insoluble in the ether-saturated mixture, and gradually separated in small, light-colored crystals. After twelve or more hours' standing, these crystals were gathered on a small balanced filter, slightly washed with cold water, dried at 60° C. (140° F.) and weighed.

This is the process recommended by the U. S. Pharmacopœia of 1880 for the assay of opium. It is rapid, simple, and accurate, provided the lime used is well burned, and the directions of the Pharmacopœia are carefully followed. Considerable experience with this process in the assay of opium seems to show that it gives results not more than $\frac{1}{10}$ to $\frac{3}{10}$ per cent below the actual morphine content of the sample.

The Pharmacopœia of 1870 requires that 1200 grains of powdered opium (10 per cent morphine) should be used in the preparation of two pints of laudanum. Each fluid ounce, therefore, should represent not less than 37½ grains of powdered opium or a minimum of 3¾ grains of morphine. But no upper limit for the strength of opium and its preparations was given, and, as will appear later, a laudanum containing 6 grains of morphine would be produced if the highest grades of powdered opium were used. The requirement that the dried opium used should yield not less than 10 per cent of morphine by the manufacturing process of the late Pharmacopœia is practically equivalent to a demand for 11 or 12 per cent of morphine, for the reason that the process there recommended is known not to recover all the morphine, or nearly as much as is shown by accurate assay. Consequently a strength of about 4 grains of morphine per fluid ounce would be really about what was required by the late Pharmacopœia.

If assayed by the more accurate processes now in use, it would have appeared that no powdered opium sold by a reputable house contained much less than 12 per cent of morphine. In like manner most moist "gum" opium contains from 10 to 11.5 per cent of morphine, few samples falling as low as 9 per cent.

Here appended is a table showing the number of grains of morphine in each fluid ounce of laudanum if made from different amounts or different grades of moist or powdered opium.

PERCENTAGES IN MORPHINE.	MOIST OPIUMS.				POWDERED OPIUMS.					
	9	10	11	12	13	14	15	16	17	18
1¼ Tr. oz. to pint	3.3	3.7	4.1	4.5	4.9	5.2	5.6	6.0	6.4	6.8
1½ av. oz. to pint	3.1	3.4	3.8	4.1	4.4	4.8	5.1	5.5	5.8	6.2
1 Tr. oz. to pint	2.6	3.0	3.3	3.6	3.9	4.2	4.5	4.8	5.1	5.4
1 av. oz. to pint	2.5	2.7	3.0	3.3	3.5	3.8	4.1	4.4	4.6	3.1
⅝ Tr. oz. to pint	1.6	1.9	2.1	2.3	2.5	2.6	2.8	3.0	3.2	3.4
⅝ av. oz. to pint	1.5	1.7	1.9	2.1	2.2	2.4	2.6	2.8	2.9	3.1

From an inspection of this table in connection with the assays of laudanum here presented it appears:

1. That a considerable number (21) show an evident intention on the part of the maker to give a full strength preparation. All results of 3.5 grains morphine and over are here included.

2. Some samples seem to have been made from one avoirdupois ounce of moist opium per fluid ounce: the results ranging between 2.3 and 3.3 grains are here included, the number of samples being 17.

3. A number of samples seem to have been made of about one-half strength, probably from ⅝ troy to ¾ avoirdupois ounce per pint. Results ranging between 1.3 and 2.2 grains are the basis of this supposition. About seven samples fall into this class.

4. Two samples fall even below this strength: they may have been on the half-strength plan but from very poor opium, or they may have been made from good moist opium in the proportion of one-half ounce avoirdupois per pint.

The analytical results presented are believed to be correct for morphine, within $\frac{1}{10}$ to $\frac{3}{10}$ grain, and the benefit of this correction has been given the manufacturers of the laudanum. Perfect extraction of all the morphine is not always accomplished even when the work is performed with care and conscientious attention to details, and it would be neither fair nor wise to condemn a man for a shortage of $\frac{1}{10}$ or $\frac{2}{10}$ grain of morphine per fluid ounce.

On the other hand, however, it is the conviction of the writer that the day for short weight or half-strength preparations has gone by.

The name laudanum should be applied alone to one preparation, of definite unvarying composition, and only that one laudanum should be kept or sold.

The argument urged in favor of "grocer's laudanum" or "family laudanum" has been that it would be unsafe to sell to untrained customers an article of such potency as is recognized by our pharmacopœia. This argument is not convincing, inasmuch as there is constant danger that the customer who is used to the weaker preparation sold at one store is at any time likely to buy the full strength article at another. Possibly the cost of the opium may have been the cause of much weak-laudanum philanthropy. At all events, a multiplicity of grades and standards of

* Read at the meeting of the N. Y. State Pharm. Assoc.

strength leads only to confusion, and in case of active medicines, to danger. Let us have reasonable standards and then be bound by them.

Laudanum Assays.

No.	Specific Gravity.	Temperature °C.	Wt. 1 fl. oz. Grains.	Solids 1 fl. oz. Grains.	Morphine 1 fl. oz. Grains.
1	0.9578	17	436.5	11.1	3.1
2	.9531	16	434.3	19.5	4.3
3	.9527	17	434.1	15.8	4.0
4	.9654	17	439.9	13.9	2.7
5	.9609	16	437.9	15.8	4.0
6	.9545	16	435.0	18.7	4.2
7	.9555	16	435.4	11.9	3.5
8	.9616	16	438.2	23.3	7.4
9	.9543	15	434.9	14.8	4.7
10	.9492	16	432.6	10.6	3.6
11	.9601	15	437.5	15.7	2.8
12	.9654	16	439.9	16.5	1.1
13	.9631	16	438.9	11.8	1.9
14	.9514	17	433.6	9.3	2.5
15	.9544	15	434.9	17.8	4.3
16	.9631	16	438.9	16.2	3.9
17	.9468	16	431.5	12.6	2.8
18	.9687	15	441.4	17.9	4.8
19	.9388	20	427.8	4.0	.9
20	.9529	16	434.2	10.3	2.3
21	.9577	16	436.4	14.4	3.3
22	.9562	17	435.7	14.9	3.5
23	.9582	17	436.7	16.2	3.3
24	.9540	18	434.7	16.7	2.8
25	.9488	16	432.4	9.1	1.6
26	.9569	16	436.1	10.1	2.1
27	.9477	18	431.9	12.7	3.2
28	.9447	17	430.5	13.1	2.7
29	.9627	16	438.7	18.6	3.9
30	.9526	16	434.1	11.8	3.3
31	.9518	16	433.7	11.9	2.6
32	.9509	16	433.3	7.2	1.9
33	.9557	15	435.5	16.5	4.3
34	.9512	17	433.5	15.7	3.9
35	.9567	16	436.0	15.8	3.2
36	.9583	16	436.7	13.1	3.2
37	.9596	15	439.3	10.4	3.5
38	.9568	17	436.0	13.3	4.1
39	.9521	17	433.9	12.0	3.1
40	.9666	17	440.5	14.0	3.7
41	.9580	17	436.6	13.9	3.9
42	.9496	16	432.7	7.6	2.0
43	.9557	17	435.5	10.7	1.7
44	.9588	16	436.9	15.2	3.4
45	.9654	16	439.9	18.4	4.4
46	.9566	16	435.9	13.5	2.4
47					
48	.9573	17	436.2	14.3	3.9

Best Form of Administering Iodide and Bromide of Potassium, also Salicylate of Sodium.

ACCORDING to Dr. Seguin, these salts are best exhibited in slighly alkaline, natural or artificial carbonated waters. Given in this manner, both the iodide and the bromide is less irritating to the mucous membrane of the stomach, the disagreeable taste is very much masked, and the salts are more quickly and more thoroughly absorbed.

Salicylate of sodium is best administered in the same manner.

Camphor Enema.

IN the *Gaz. Hébdom.*, Mr. Vigier states that camphor may be perfectly suspended, and become easily divisible, by the following formula: Camphor 15 grains, gum arabic 30 grains, one yolk of an egg, and 2 ounces of decoction of linseed.

Why Should Tincture of Opium be Made According to the Pharmacopœia?*

BY A. B. HUESTED, M.D., OF ALBANY.

THE United States Pharmacopœia is the recognized standard in this country. It is the work of men of ability duly authorized for the labor. Therefore it should be followed, unless feared to be in error.

That tincture of opium is not made of the standard strength by many, is evident from a simple inspection of samples from various sources. Analysis shows that many specimens apparently and probably designed to be of standard strength are not so.

The main reason for non-conformity to the standard is the expense of the opium. The unscrupulous not only use the moist gum, but do not give full weight even of this; others using the moist gum give full weight, but do not allow for the moisture, which varies from seventeen to twenty-three per cent. Still others, strictly honest in purpose, use the moist gum, and do allow for moisture, or dry and powder the gum before using it.

None of these methods fulfil the pharmacopœia requirements unless a step further is taken, and it is demonstrated by assay that the dried and powdered opium comes up to the morphine standard.

To those who purposely cut short the opium there is but little to say. If they do this for purpose of gain, nothing probably but fear of the law embodied in the food and adulteration act will cause them to follow the standard. Those who have made weak laudanum because of a known weak precedent and of fear that disastrous results may be caused by conforming to the standard can have no better time than the present to make the standard strength. It is known to physicians that an increased opium strength was authorized by the pharmacopœia of 1880. Proper labelling would call their attention to this. When sold to others, a proper label, giving dose, would, with a little care on the part of the dealer, prevent all probable injury.

The new Pharmacopœia says that powdered opium should contain not less than twelve, nor more than sixteen per cent of morphine. Evidently, the mean of fourteen per cent is intended. Examination of the best-powdered opium in market shows it to contain an average of about fourteen per cent of morphine. This is undoubtedly why the standard was raised.

Tincture of opium is a valuable and frequently used preparation. It should be uniform in strength. A definite quantity from one source should have the same potency as the same quantity from any other source. A certain care is requisite that such results may be obtained. If we demand assayed opium, it will be furnished us, or, if preferable, we can make our own assays, and by a simple calculation make our laudanum of the authorized morphine strength.

Some may urge that such care is unnecessary as physicians, preferring the deodorized tincture, now use comparatively little laudanum, and as the latter has become largely a domestic remedy. This is no excuse. Many physicians would prefer to use a preparation representing the whole of the opium, but have been driven to employ some more reliable and uniform preparation.

Fluid Extract of Senega.*

BY CLAY W. HOLMES, OF ELMIRA.

THE preparation of this fluid extract has always been attended with considerable difficulty, and the product, as obtained by the pharmacist, manipulating under the guidance of the Pharmacopœia, while very handsome in its first appearance, uniformly becomes converted into a gelatinous mass within three months. At least, such has been the result with all that which has been made by the writer. The various formulas which have from time to time appeared in the standard pharmaceutical journals have been tried with all possible care; but after a length of time, varying with each process, the same gelatinization has

* Read before the N. Y. State Pharmaceutical Association.

taken place. Last fall, when preparing our "List of Queries" for the printer, I was impressed with the one in reference to the best method for preparing this extract, having discovered the same day that our supply of fluid extract of senega was exhausted. My attention being thus forcibly drawn to the subject, I began at once to make investigations. After consulting the best authorites without gaining any new idea, I instituted a series of experiments, and, without following in detail the unsuccessful ones, I will briefly cite the step in the process which I finally arrived at.

Sixteen Troy ounces of senega root, ground to the proper degree of fineness, were moistened thoroughly with dilute alcohol, packed moderately in a percolator, and allowed to stand four days. Percolation was then proceeded with, dilute alcohol being used as the menstruum, until the root was exhausted. The percolate was then evaporated slowly in a water bath at a temperature below 105° F., until reduced to eleven fluid ounces. This evaporate was transferred to a moist filter and allowed to drain. The soft mass remaining was washed with water by means of a spritz until the filtrate measured fifteen fluid ounces. One ounce of alcohol was then added to raise the whole to sixteen fluid ounces. I have here the first and experimental pound thus made for your examination. It was completed on the 10th of last October, and has not been filtered since it was prepared. It was constantly at rest, in a warm room, for six months before it was examined. When taken up for examination it appeared, as you now see it, perfectly clear and limpid, without any sediment. Its color is good, the odor characteristic, and its external appearance all that could be desired.

I have also prepared a sample of syrup of senega by taking one fluid drachm of the fluid extract and seven fluid drachms of simple syrup. The syrup is brilliant, perfectly transparent, and seems to the writer to be the finest he has ever seen. Agitation shows the presence of a large proportion of polygalic acid. Practical tests as to its therapeutic value have not yet been made. The theoretical proof of its value is conclusive if its active properties be resident in the acrid principle called polygalic acid. The U. S. Dispensatory states that the virtues of senega seem to reside chiefly, if not exclusively, in the polygalic acid. Quevenne obtained this acid by exhausting senega with 33% alcohol, evaporating to the consistency of a syrup. From this, when alcohol is added, a precipitate falls which is chiefly polygalic acid. The physical properties of this acid are, in a marked degree, those of senega. This leads to the conviction that the theory advanced is correct. You will observe that the Quevenne process and that followed in preparing this fluid extract are analogous; also that the sensible properties of the fluid extract and syrup correspond to those of the acid and the root. Therefore, the writer believes that the extract will prove satisfactory in its therapeutic test.

Fluid Extract of Senega.*

BY P. W. BEDFORD, OF NEW YORK.

THE cause of gelatinization in the preparations of senega root, beyond question, are the pectin compounds the root is known to contain. The presence of other constituents, polygalin, sometimes called polygalic acid, resin, sugar, and fixed oil, have nothing whatever to do with the gelatinization which occurs, and the removal or destruction of the pectic acid or pectin compounds will effectually prevent gelatinization. There are two methods by which this may readily be done. When the syrup alone was officinal, the writer was in the habit of departing from the official directions for making it. The great annoyance of this method was the difficulty of filtration. When any watery liquid containing pectin compounds is heated to the boiling-point, there is gelatinization, as in the case of fruit juices, which, when heated with sugar to boiling and cooled, become quite solid, as is the case with the various fruit jellies. In these, pectin compounds cause the solidification. If, however, we heat an alcoholic percolate or tincture of senega root quickly to the boiling-point, and let it stand a few hours, we notice a scanty, fawn-colored deposit, which may readily be filtered out. This deposit appears to be the pectin compounds. When they are thus removed, there is no subsequent gelatinization of the liquid. Hence, for many years I made my syrup of senega by heating the entire alcoholic percolate to the boiling-point, letting it stand twelve hours, filtering, evaporating to the required quantity, adding the necessary amount of sugar, and dissolving.

The fluid extract can readily be prepared by the same method, but as the present ideas are that the application of heat to the fluid extracts should be avoided, such a method could hardly be acceptable.

The other method of preventing gelatinization is to destroy the acid character of the pectin compounds by adding ammonia or some other alkali. Whenever gelatinization has occurred in either fluid extract or syrup of senega, the mass may readily be rendered fluid by the addition of a few drops of water of ammonia cautiously added, so that excess may be avoided. On the basis of this fact, formulas have been suggested in which the addition of ammonia or other alkali to the liquid used in percolation will, by neutralizing the pectic acid, prevent any subsequent gelatinization. The pharmacopœia of 1880 has very properly so modified its formula for the fluid extract, and, as this has been published since our last gathering, a compliance with its directions will obviate all difficulty from gelatinization, and give a product unexpectionable in every respect.

* Read before the N. Y. State Pharmaceutical Associotion.

Poison Sales and Poison Law.*

BY P. W. BEDFORD, OF NEW YORK.

IT has been the custom in many States to restrict partially the sale of dangerous poisons. This restriction takes either the form of limiting the retail sales, so that persons who desire poisons either to destroy their own lives or those of others, cannot readily obtain them, or by requiring such labelling that the danger from ignorance and carelesness be reduced to a minimum. A third method is to require a witness to the sale or a suitable entry in a book, or both, so that the purchase of poisons may be traced in cases of accidental or criminal death therefrom. The law is based on the theory that the State has the arbitrary right to enact such laws as may be necessary to protect life and prevent crime. This principle cannot be denied, and it is therefore proper that poison laws and pharmacy laws should be enacted and enforced. But how far do we respect and obey the poison laws of this State?

The laws at present in force in this State which have any bearing upon our vocation are contained in sections 401–405, and as they have already been embraced in full in the report of the Committee of Pharmacy Laws, I simply give here the requirements in my own language.

Sec. 401 requires that *every package* of medicine be labelled as to its contents; any failure to do this, or the placing of any false label upon such package, constitutes a misdemeanor.

Sec. 402.—Every poison or poisonous substance sold, or in any other way transferred to another person, must first be recorded in a book kept for the purpose, with the name and residence of the person receiving the article, and the name and quantity of the article transferred. This must be done in the presence of a third party as a witness, and the name and residence of this witness must also be entered upon the book of record. The only exception to the presence of a witness is when there is a written order or prescription of some practising physician whose name is attached.

Sec. 403.—The book of registration of sales of poison must be shown, *on reasonable demands*, to any person at any time, during business hours, under penalty of fifty dollars.

Sec. 404 appears to reiterate Sec. 401, but defines that

* Read before the N. Y. State Pharmaceutical Association

the poison or poisonous substance labelled shall not only state the name of the substance, but also the word *Poison*, and the name and residence (business place) of the seller must be plainly printed or written upon the label.

The next section refers, not to poisons, but to the dispensing of prescriptions; and as this is the only other provision that applies to retail druggists, its sense is also stated here.

Sec. 405. Prescriptions can only be dispensed by persons who are graduates of a college of pharmacy, or of a medical college, or by persons who have not had less than two years' practical experience in a drug store. But the following exception is made: "Except under the direct supervision of some person possessing one of these qualifications;" that is, any person may put up a prescription, provided that a graduate of pharmacy, a graduate of medicine, or a two-year-old apprentice looks on to see that it is done properly; and the penalty for the violation of this section is a fine not exceeding one hundred dollars or an imprisonment of six months; while if death follows such violation, the punishment may be from one thousand to five thousand dollars, or an imprisonment of from two to four years, or both fine and imprisonment.

The sale of poisons openly over the counter by the retail druggist, then, by the law of this State, requires registration, the presence of a witness, and a label, with the name of the article, the word poison, and the address of the vendor.

Is this done? How many of the druggists of this State, how many of the members of this Association, do this always?

In my experience in business, I am led to believe that the majority of druggists content themselves simply with a poison label, and do not take the trouble to either register the sale or provide any witness.

The compliance with the full intent of the law is urged, first, because it is a proper law, and should be obeyed; second, because such compliance will help the ends of justice in tracing criminal intent on the part of those who have made criminal use of the articles purchased, or aid to determine in some cases whether murder or suicide has been committed; third, as a matter of self-preservation, of reputation and integrity, and to prevent the pecuniary loss that would come upon all known to have been aiding by the loss of human life.

As the present law stands, there is a looseness of description as to what should be labelled poison. It now says: "Any poison or poisonous substance." The range is a wide one, and may lead to some future necessity for a legal interpretation of what may be termed "a poisonous substance." Meanwhile, I would urge that *all* should be so labelled, at least each of the poisons enumerated in the pharmacy laws now in force in New York or Brooklyn, or in the law which has been proposed by this Association.

The necessity for such care in observing the now loosely framed poison laws which exist in our own State is an additional reason why we should heartily unite in our endeavors to secure a wholesome pharmacy law which may more carefully define what poisonous substances are, and, by incorporating them in the new law, the better protect us in their observance from the risk we now run, by not being sure what some court or jury may define as "a poisonous substance."

Solubility of Commercial Sulphate of Morphine.

A. C. NAGLE contributes to the *Druggist's Circular* the results of a series of experiments to determine the comparative solubility of sulphate of morphine as produced by different manufacturers. Products of the following houses were used: Powers & Weightman, Rosengarten & Sons, C. Pfizer, Merck, E. T. and H. Smith & Co. He found that "the variation in solubility of morphine sulphate as produced by four different manufacturers is very minute—in fact, too small to be perceptible in general dispensing practice." All the specimens were soluble (in round numbers) in twenty-four parts of water at ordinary temperatures—the standard established by the new Pharmacopœia.

To Impart a Fresh Green Color to Fats and Oils.

ACCORDING to C. Schmidt, this may be accomplished by heating the oil with about one-twentieth part of water and a sufficient amount of finely-cut green grass, over a naked fire, under constant stirring, until the water is evaporated. [The process is mentioned in reply to a query in the *Pharmac. Zeitung*, how a fine green color may be imparted to the so-called Olea cocta and other preparations supposed to be made from fresh chlorophyll-containing parts of plats. We mention it chiefly because we think the same process may be used for imparting a fine green color to preserved vegetables, pickles, etc.]

The same author states that the same effect may be produced in winter (when green grass is not available) by triturating enough of a mixture containing 10 parts of powdered turmeric and 1 part of indigo with the water before heating with the oil.

Another correspondent of the same journal states that Mr. Schütz, Apotheker in Vienna, has lately put on the market a "neutralized and dialyzed chlorophyll," in form of a thick extract, which may be used cold or hot. It is said to produce a very durable color, unaffected by ethereal oils or ammonia, and has the advantage that it makes the long-continued boiling of the vegetable matter unnecessary.

The Nature and Source of Ichthyol.

IN March last (p. 73), we gave an account of this new therapeutic agent, which has been introduced by Dr. Unna, of Hamburg, as a prompt remedy in certain skin diseases. We could not, at that time, give any further information regarding its origin and nature than was contained in the original paper, from which we translated the article. Further details have recently come to hand which, while not entirely clearing up the subject, yet throw considerably more light upon it.

According to O. Rosenthal (in *Monatschr. f. prakt. Dermatologie* and *Deutsch. Med. Zeit.*, 1883, No. 17), ichthyol is obtained from a bituminous mineral which is found near Seefeld in the Tyrol [about twenty miles W. N. W. of Insbruck]. The color of the stone is light-brown and brownish-black, and it contains a varying percentage of bitumen—between ten and sixty per cent. The layers of the mineral are surrounded by a very "meagre" formation, the so-called "gallen-stein," in which a great number of fish impressions, and even some fossil portions of fish, have been found. This led the geologist, Prof. v. Fritsch, to regard the bitumen as the animal residue of antediluvian sea-animals and fishes. Although the mineral deposit is situated about five thousand feet above the level of the sea, Prof. Fritsch's theory is nevertheless quite plausible, since the bitumen can be shown to contain the basic substances found in bone tar oils. At all events, the name *ichthyol* has been given to the new preparation for the reason just stated.

The bituminous rock is subjected to a dry distillation in iron retorts, during which operation a tarry product of very offensive odor is obtained. This separates, after standing some time, a thin, fluid, dark-colored oil. After it has been carefully purified [how?—ED. N. R.], it is treated with concentrated sulphuric acid. Sulphurous acid is thereby produced, and a sulphate is formed which must be freed from the excess of sulphuric and sulphurous acids. The result is *ichthyol*. This has a peculiar herb-like (?) odor, a faintly alkaline reaction, and contains ten per cent sulphur, which is present in form of a sulpho-acid. It has been found impracticable to subject ichthyol to distillation, since it rapidly decomposes under these circumstances.

Dyspnœa Due to Salicylic Acid.

DR. LOUVAIN, of Carlsbad, has met with several cases in which difficulty of breathing was due to the administration of moderate doses of salicylic acid; the breathing was labored and rapid.—*Berl. Klinische Wochenschr.*, 1883, No. 16.

Pill-coating in the Small Way, with Home-made Apparatus.*

LUTHER F. STEVENS, BROOKLYN, N. Y.

DURING the past winter I have arranged a plan and method for use in my own store, of coating pills with gelatin, which, at a small outlay for "machinery," works well and neatly, and is capable of indefinite extension. A description of the apparatus, with the aid of diagrams appended, will enable almost any one who is at all handy with a pocket-knife to obtain, from materials already on hand, an outfit which will answer all the requirements of a small business, at a trifle of cost. I have paid out thus the large sum of seventy-five cents (and that to a tinsmith for making a water-bath which would fit my stove). The details here given have all been carefully worked out and simplified where possible, and are practical. No patent has been entrenched upon; in fact the whole is entirely original, and has cost considerable in time and thought to arrange, but is now published for the benefit of others, who, perhaps, like myself, prefer a home-made plan to any other. A sharp knife, a light hammer, and a straight ruler are all the tools really requisite, but sandpaper, a tiny plane and pincers are convenient additions.

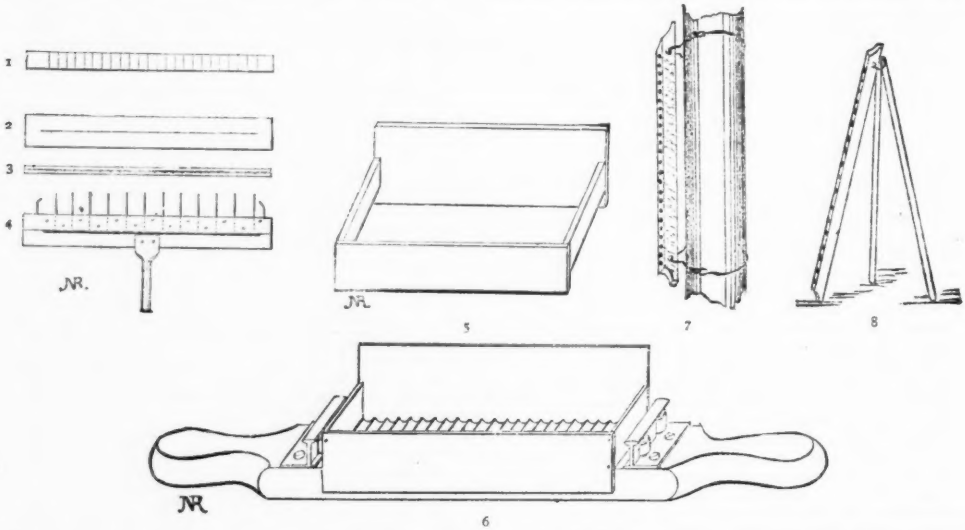
Cigar-box wood is plentiful in nearly every drug-store, is of even thickness, and when freed from adherent paper, can be cut with a knife point and straight edge like pasteboard. From a straight-grained piece, about one-eighth inch thick, obtain a strip *half an inch wide*, and about one inch longer than the *cutters of your pill machine*. Lay this strip down upon the cutters and tap firmly with a light hammer, or mallet, until the impressions of the cutter edges are quite deeply indented; it will then resemble Fig. 1.

Take another strip the same length, but *one inch wide;* through the middle of this make a straight longitudinal incision abouth $\frac{1}{16}$th of an inch in depth, and stopping short by half an inch of either end, as shown in Fig. 2. Into this cut press a piece of watch-spring, a narrow strip of tin, or any other thin metal obtainable, leaving the edge projecting for not more than $\frac{1}{16}$ inch.

Turn the *one-half inch* piece, indentations downward, upon the one-inch piece (it fills the space between one edge and the metal projection), clamp them together by means of a pin at each end, which may be cut off and riveted later on, or the novelty wire staple, now sold at many stationery stores, will be found to answer. The edge of the doubled pieces will be found to appear like Fig. 3.

There is seen the use of the first step. Into each of the small holes here apparent a needle may be forced, eye downward. They will be parallel if the cutter edges were. The points will be even because the other ends are stopped by the watch-spring, and there will be a *needle for every groove of your pill machine*. In practice, place a needle in every other opening, or the pills, unless very small, when picked up will be too close together. For various reasons I prefer the *No. 6 betweens*, and that is the size necessary if the scale adopted in these diagrams is to be followed If portions of the eye-ends are moistened with a saturated solution of ammonium chloride, it will cause them to slightly rust, and the wooden clamp will hold them with a firm grip. A pin, however, may be driven through between each needle for additional security. Attach a handle, and you will have Fig. 4.

This is now a row of parallel, equi-distant, even-pointed needles, in a handled bar. Suppose twenty-four pills have been rolled and cut, and lay *in situ* upon the machine; turn up the receiving-box at the further end, the bottom against the ends of the grooves, raise the forward ends, and the pills will run down against the obstruction. The needle-bar may then be easily directed by hand and eye so that each needle shall transfix a pill ready for dipping. This will answer very well for small work, but when more is desired to be done, a larger method can be arranged.



Lay aside the main machine, reserving only the handled cutters. From cigar-box lumber still make a box like Fig. 5 (which is drawn in isometric perspective, the dividers laid to any part will give the proportionate measurement), without a bottom, which will inclose the metal grooves. The sides are lower than the ends, to clasp the wooden base; the back is higher than the front, to steady the needle bar.

Place it in position, as in Fig. 6. Throw in any number of pills until the grooves are filled. Slightly tip the apparatus back, that they may follow down the grooves as fast as removed from the lower end. The needle-bar, Fig. 4, has shown upon it a bent pin at each end. By the aid of these and the high back as guides, slide the bar down until the ends come in contact with the box. It has then infallibly picked up its complement of pills. Dip them into the coating solution and quickly withdraw, twirl the handle between thd tnumb and finger, with an eye to the even flowing of the covering upon each pill. In thirty sec-

* From *Pharmaceutical Record.*

onds or less it will have "set," and the bar may be laid aside to complete the drying, and another bar may be dipped.

For the drying, I have fastened upon my stove-pipe a pine strip ½ inch × 1 inch × 24 inches, with twenty-four holes bored through it, inclined downward. Into each of these the handle of a needle-bar may be thrust and the pills held upon it will be subjected to the influence of the current of warm air continually ascending. With a brisk winter fire, pills may be dried in fifteen minutes sufficiently to be sent out. Working with twelve needle-bars drying one gross at once, I have coated 1,500 pills during a day without interfering with other operations of the store. The plan is shown in Fig. 7. The same may be rigged into a tripod (Fig. 8) to stand in a sunny window, and the work will proceed nearly as fast.

It is readily seen that the more of the easily and quickly-made needle-bars (Fig. 4) you are in possession of, the larger the number of pills that can be dried at once. In my own case, the capacity of my "factory" is limited only by the extent of my stove-pipe, or my south windows. When a drying-closet is at hand, or steam heat available, the problem is simpler still, and each who chooses can work it out according to local needs.

After many experiments, details of which are not necessary, I have adopted the following formula for the solution, which is *very* soluble, dries easily and quickly, with a handsome gloss:

Gelatin (Cox's or Gold Seal)	gr. 200
Cold water	gr. 200
Let it stand until the water is absorbed and add:	
Hot water	gr. 640
Mucilage, U. S. P	gr. 300
Syrup	gr. 400
Glycerin	gr. 60
Ft. sol. heat and strain	
	gr. 1,800

This finishes about four fluid ounces, and is of convenient density. When cooled, it forms a jelly-like mass which will keep for two weeks in winter in an ordinary store-room, can be handled easily, and cut from as wanted to melt down. When working steadily along, a few drops of water need to be added from time to time, or it becomes too thick. If to be kept on hand, one grain salicylic acid will act as a sufficient preservative. A solid drop of it, cooled and dried in starch for two weeks, dissolves on the tongue in two or three minutes.

A water-bath is necessary for prolonged work. My tinsmith made one which fits a certain place upon the back of my stove, where only two inches space was available. The inner dish is one inch wide, and holds about four fluid ounces of solution.

Pills, if intended for coating, need to be massed rather hard and well-rolled under the cutters. When working for "stock," allow them to dry somewhat that the outside shall be slightly hardened, which will give the needle a better hold. Pill cathartic compound will dip well in two or three hours, blue pills best after twenty-four hours. Quinine pills, hard-massed, powdered, if at all, very lightly with gum arabic rolled beneath the cutters until polished, and allowed to rest until the next day, and then dipped in a very thin and hot solution, will turn out as handsome as any that are offered in the market, and the coating so soluble that it will not endure many attempts at swallowing.

Angostura Bitters.

Angostura bark	℥ iv.
Chamomile flowers	℥ i.
Cardamom seeds	ʒ ij.
Cinnamon	ʒ ij.
Orange peel	℥ i.
Raisins	1 lb.
Diluted alcohol	2½ gal.

Macerate for one month, then press and filter.—*Drugg. Circular.*

To Purify Ethereal Oils.

According to the *Chemist and Druggist*, those which have become injured by age may be partially restored by shaking one hundred parts of the oil with a mixture of one part of permanganate of potash in eight parts of distilled water. They should be shaken vigorously for a quarter of an hour several times, with intervals of one hour's rest, and afterward drawn off and washed with warm water.

Maximum safe Limit of Percentage of Carbolic Acid in Antiseptic Gauze.

Dr. Rupprecht, chief-surgeon at the Diakonissen-Anstalt in Dresden, writes to the editor of the *Pharmaceutische Centralhalle* (1883, No. 12) as follows:

"The results of the last analysis of the commerial Lister's gauze—5.9 per cent of carbolic acid, affords me an opportunity to ask that you publish my views regarding the highest safe limit of carbolic acid in such dressings. Arnold's as well as Kahnemann's carbolic gauze contains, as you have yourself found, about 6 per cent of the acid. If this gauze is applied over extensive surfaces (f. i., a whole leg, or the abdomen) in the larger operations, and covered with impermeable tissue, adults can be rendered seriously ill by the absorption of carbolic acid through the skin; to children up to about 5 years of age may it be *fatal*. I perform over 400 operations every year, never wash out a wound with carbolic acid without rinsing afterwards with salicylic acid, and cause the urine of all persons operated on and dressed to any extent with carbolized gauze, to be tested for carbolic acid (by means of solution of chloride of barium). For years I have never seen a case of carbolic poisoning, as long as I used a 3.5 per cent gauze (for children 1 per cent) prepared either by myself or specially prepared for me. My stock of gauze had recently run out, the new supply of 3 per cent gauze had not arrived, and I was compelled to use, during several days, the gauze made by Kahnemann. Although every other step of treatment was the same as in former cases, three of the operated persons nevertheless developed symptoms of carbolic poisoning (vomiting, collapse, cessation of precipitate by barium chloride in the urine), and a child of 5 years of age succumbed. Running the risk of reiterating what should be well-known, I beg you will state the following propositions, *for which I ask the largest possible circulation:*

1. A 3-per-cent gauze (for children 1 per cent) is amply strong enough to insure an aseptic condition of wounds.

2. A 6-per-cent gauze, employed for larger dressings, may produce death by absorption through the skin; this may easily occur in children.

3. Manufacturers of carbolic gauze would do well to state the percentage of carbolic acid contained therein upon the label.

Are your Graduates Correct?

Stearns' *New Idea* suggests in answer to this question that the reader get about one quart of ice-water and pour into it hot water till after duly stirring, a thermometer left in it for five minutes, shows exactly 60° F. Paste a strip of paper alongside of the marks of your fluid ounce measure, and put the latter on the scales, balancing it accurately. Now put fifty-seven (57) grains in the opposite scale, and balance exactly with the water, adding it toward the end, drop by drop; when perfectly balanced, ke p your eye on a level with the surface of the water, and wieh a pencil, or pen and ink, mark a line, exactly flush with tthe water, on the strip of the paper. Take off the 57 grains, put on 228 grains Troy, and proceed as before; this is the half fluid ounce; 456 grains Troy gives the one fluid ounce.

Proceed in similar way with all your glass measures—one pint weights 7,291 grains Troy. But see to it that the water you use has exactly 60° F., and that you translate the grains into Troy weights; do not use avoirdupois instead. When you have done, compare your marks, which are correct, with the engraved ones, and you will sometimes be astonished at the difference.

ORIGINAL COMMUNICATION.

Apparatus for the Rapid Filtering of Syrups, etc.

EDITOR NEW REMEDIES:

I SEND you a crude sketch of my apparatus for the rapid filtering of syrups, fluid extracts, etc. It is made of heavy tin with the exception of the screw joint—which is zinc, found in stock at all tin stores—and the sieve of the upper part which is silver-plated brass gauze.

The gauze furnishes support for a disk of filter-paper. A narrow, solid ledge surrounds the supporting gauze, and makes a tight joint with the overlapping filter-paper. Any suction apparatus may be attached to the small tube on the top of the bottom vessel.

Instead of the plated gauze, perforated tin may be used. If gauze be used, cross-wires must be underneath. With a pressure of 250 millimeters of mercury I can filter a quart of fluid extract in ten or twelve minutes, and a quart of almost any syrup in a very little more time. I have used with satisfaction prepared asbestos for a filtering material. Respectfully

J. N. HURTY.

INDIANOPOLIS, Ind., May 25th, 1883.

Hurty's Syrup Filter.

Guadaloupe Vanilla.

ATTENTION is directed by M. Charbonnier, in the *Répertoire de Pharmacie* to a new species of vanilla that has recently appeared on the French market. It appears to be as yet little known, and a description of it is not to be found in any work on materia medica. According to accounts, it has been cultivated in Guadaloupe during the past seven or eight years, and is probably furnished by a variety of *Vanilla planifolia*. It at first sight resembles the Bombay or Java vanilla, but, though blackish, the color of the pods is not quite so dark as the latter sorts. It is dryer-looking, and not so covered with crystals of vanillin. But the special characteristics are a peculiar odor and the fact that the pods are somewhat flattened instead of being of the usual irregular triangular form. The last-named characteristic is probably due to a difference in the method of preparation. Further, the surface of the pods is finely striated longitudinally, and there are but few depressions. Generally, this vanilla has a good appearance, but its perfume is coarser and less permanent than the Bourbon sorts. It is of inferior quality, but at the same time its price is only about half that of Bourbon vanilla.

Hydnocarpus Oil as a Substitute for Chaulmoogra Oil.

THE following article, taken from the new work of Professor W. Dymock, of Bombay (see p. 218), will afford information on a substance which has several times been the subject of inquiry on the part of some prominent dermatologists. The natural family *Bixineæ* furnishes three drugs which are met with in the Bombay market. One of them is the following:

Hydnocarpus Wightiana—Blume Rumph. The seeds.

Vernacular—Kowtee (*Bomb.*), Kosto (*Goa*).

History, Uses, etc.—All that we know of the history of this tree is that the seeds have long been used as a domestic remedy upon the western coast in certain obstinate skin diseases, and that the oil is expressed by the poorer classes for burning. Latterly, the oil has been brought to the notice of Europeans as a substitute for chaulmoogra, and is being used in the Bombay presidency with satisfactory results.

Description.—The fruit is globose, about the size of an apple; it has a rough, thick, brown rind, which is generally studded with large tubercles, but non-tubercular fruit may be found on most trees. Within are numerous angular seeds, about three-quarters of an inch in length, imbedded in a scanty pulp; these have a rough striated gray testa, which incloses a copious oily abumen, containing two large, plain, heart-shaped leafy cotyledons, like those of chaulmoogra. The albumen, when fresh, is white, but turns of a dark-brown color in the dry seeds. The odor resembles that of chaulmoogra. The oil is of a pale sherry color, sp. gr. .9482 at 85° F.

Microscopic Structure.—The albumen presents the same appearance as that of the chaulmoogra seed.

Chemical Composition.—The oil gives the green color with sulphuric acid which chaulmoogra does, but in a less degree. The production of this color has been shown by Moss to depend upon the presence of gynocardic acid. During his experiments, he found that palm oil produced a similar reaction. Gynocardic acid has an acrid burning taste, and appears to be the most important constituent of these oils. The oil has an odor like that of chaulmoo ra, which it also resembles in color. One hundred and fifty pounds in stock for more than twelve months has not as yet given any crystalline fatty deposit.

Commerce.—The seeds are not an article of trade, but, if ordered, may be obtained at about half the price of those of chaulmoogra (that is, about 7½ rupees per Bengal maund of eighty pounds).

Syrup of Castor Oil.

THE following formula is taken from the *Farmacista Italiana:* Picked gum arabic, grams 54; orange-flower water, grams 142. Make a thick mucilage with a portion of the water, and in a marble mortar; mix this with 142 grams of fresh castor-oil until perfectly mixed; add finely-powdered sugar, grams 196; the rest of the orange-flower water and 8 grams of cinnamon-water. After well-mixing in the cold, raise it by a gentle heat to the boiling-point; cool skim, and preserve.

A new Gelatin Mass for Hectographs.

THE French Ministry of Public Works publishes a formula for a hectograph or gelatin pad which is said to produce very satisfactory results. The composition consists of 100 parts of good ordinary glue, 500 parts of glycerin, 25 parts of finely-powdered baric sulphate, or the same amount of kaolin, and 375 parts of water. For the copying ink a concentrated solution of Paris violet aniline is recommended. To remove the old copy from the pad, a little muriatic acid is added to the water [the use of acids is *not* to be recommended, inasmuch as any trace left in the mass may affect the ink of subsequent impressions.—ED N. R.], washing it gently with this liquid by means of a soft rag, afterwards using blotting paper for removing superfluous moisture.—*Pharm. Handelsblatt, Pharm. Record.*

Tinctures of Fresh Herbs.

THE introduction of this class of preparations into the Pharmacopœia of 1880 has given them a position in medicine which at least entitles them to be thoroughly studied and examined; while the indefinite way in which they were placed on the list is in itself an admission of how little the largest class of practising physicians know of their properties and uses.

Their therapeutic value is so variable, when compared with preparations of the same nature from dried plants, that it will be necessary to consider each separately. The use of one or the other in the so-called homœopathic dilutions would hardly be a standard of comparison for their strength, for the reason that the mother tincture is so much diluted that a difference of 50, or even 100 per cent, in the strength of the basis would not be appreciated in the dilution.

Their use in this manner, and their reputation as distinctly homœopathic drugs have put them out of the reach of the general practitioner, who, until lately, has classified the drugs and preparations common to that school, together with the theory of their use, and dismissed both without looking into their possible value to his practice, and the arbitrary strength given in the various homœopathic pharmacopœias to their tinctures is usually very misleading and wrong.

Looking through the books of Phillips and Ringer, which may be said to represent the best of modern and advanced therapeutic writings, we find tinctures prepared from the fresh plant mentioned in many instances, and in some cases favorably when compared with officinal tinctures.

When it occurs to us that the first experience in medicine is generally from the green plants, from which the first preparation is made, and that the first impressions formed of the value of the plant in medicine are not always realized in the dried, it is more than possible that the reason often lies in the method of its exhibition rather than its ability to produce symptoms sought for.

The extracts and tinctures of drugs are expected to be the best solution of their medicinal principles in the liquid used to extract them. The best method to present them to the dissolving menstruum is such, first, that the greatest surface shall be acted upon, that the medicine may be the most readily and completely separated by it from the inert part of the material; and second, so that there will be as little change in the physical properties of the drug as possible, to present it in the right form.

The menstruum necessarily should be either the best liquid, or the best combination of two or more liquids, to dissolve the active principles.

The drugs of the pharmacopœia, before the adoption of the new class, were all dried and made into a more or less fine powder. A study of whether this was the best manner of preparing them would divide the preparations into two classes—alcoholic and hydro-alcoholic—and would also bring up the exception to any arbitrary rule of division, that many natural solutions, either of vegetable or animal matter, are often rendered much less soluble when once dried and attempted to be dissolved again.

This is a very strong reason why a tincture should not be made from a fluid extract, a practice among druggists which cannot be too strongly condemned.

Another thing which will have to be allowed for in preparing the green plant solutions is the difference in amount of moisture in the plant when gathered. The plants contain a large percentage less moisture in the afternoon than in the morning, and the tincture would become proportionately stronger as made from plants cut later in day.

Some of the plants from which the green tinctures are said to be as good, or better, in their action than those from the dried and powdered drugs, are:

Pulsatilla, hydrastis, actæa rac., h llebore, lobelia, ipecac [? ED. N. R.], *veratrum, digitalis, gelsemium, rhus, thuja, arnica, sanguinaria.*

Strongly developed, perfect plants should be selected. They should be cut just above the root leaves, in the morning, shortly before, or just on commencing to flower. Narcotics should be gathered when in full bloom. Roots should be divided into three classes: first, annuals, which are to be cut before the seed ripens; second, biennials in the spring of the second year; and third, perennials, in the autumn. Care should be taken to separate them from any dirt or foreign matter, and that the preparation should be started immediately after gathering the drug.

Nature furnishes undoubtedly the best solvent for the active principles of any drug. They are the vital parts of the plant. They are carried from the root to the stem, from the stem to the leaves and flower, and from the leaves back to the bark. They are found in larger quantities and most active in the living plant. They are found in every cell in perfect solution. The growth of the plant spreads towards the top; each cell in the plant is a perfectly independent department, furnished with a close coat, which surrounds and holds its own fluid. The food for the plant is contained in this cell. The development of the plant is carried on by a process called endosmose, or dialysis, and dialysis would be impossible unless the solution is perfect and the matter in solution a crystalloid. Our fluid extracts and tinctures are never perfect solutions. They are precipitating and changing constantly.

Again, the cells of most plants are so small that it requires a microscope to distinguish them apart. The process of drying shrivels and contracts them into a much smaller compass. The vital principle is confined in the dried cells, which are covered with a hard, tough coat. The powder directed by the pharmacopœias is seldom finer than a No. 80—each one of these must comprise many of the cells, with the active principles, to a great extent, dried and changed from their natural state.

The tendency in medicine is to use the preparation which most thoroughly represents the plant when that is indicated. When the fresh plant is cut and pounded to a pulp, the natural juices or solutions are in the very best possible condition to be treated in the manner which shall furnish a product that will answer the requirements of perfect solution and stability.

We are confident that methods will be devised to make preparations from green roots and herbs, of such a uniform and standard stamp that they will prove a valuable aid to therapeutics, and an elegant addition to the list of pharmaceutical products, and that their action will be satisfactory to the physician who studies the effects of his medicines to use the smallest quantity to produce an effect without causing any more physiological disturbance than necessary. —*N. Y. Med. Times*, June.

Label-Holder.

MR. N. B. SCHNIEDT describes in the *Pharmaceutical Record* the following device for holding labels:

Get two pieces of stiff, heavy chromo board, 11x12 in., and one piece, 3/16x12 in. Cover all with heavy lead-colored drilling. Sew the two larger pieces to the small strip, so as to hinge on it. Punch in each leaf three downward rows of holes—one in the middle, the others 3½ in. on either side. The distance apart in the rows can be varied to suit the size of the labels; 1⅜ in. is about right for general labels, but some must be wider for the dispensing and other broad ones. Begin at the top hole and string heavy round elastic-cord in and out through the holes until all the spaces are passed over, then tie the ends of the cord together. Keep the gum moderately stretched. After placing the labels under the cord, which will pass over the middle, the book is ready for use.

Such a book will hold sixty to seventy labels, fifty of a kind. The addition of another leaf would accommodate about forty more. Of course, no labels should be placed on the last or bottom page.

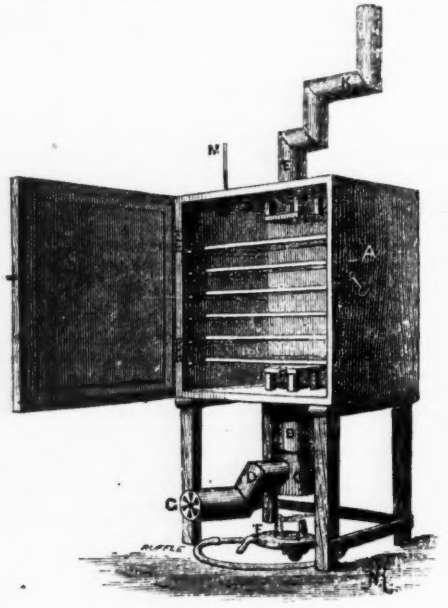
The book could be made without covering by making the joints with glue and strips of muslin, but it would be unsightly and not so durable.

Descriptive Note of a New Hot-air Chamber Suitable for Pharmaceutical Purposes.

BY THOMAS MABEN.

THE ordinary steam or hot-air chambers for laboratory use, although meeting most of the requirements for which they are designed, have the disadvantage of being more adapted for experimental than manufacturing purposes, and are, moreover, of such a price as to exclude their use in small pharmacies. The want of a cheap and convenient apparatus has induced me to bring under your notice the one on the table. I may remark that the design is due to Mr. Hislop, one of my apprentices, who intended it for drying photographic gelatin plates, but by slight modifications of the interior I find it perfectly adapted for the purposes of my own laboratory.

The chamber consists of a strong wooden box (*A*), 18 inches high by 18 inches wide, and 14 inches deep. To the front a door is attached, hinged in this instance, but a vertical sliding movement would be more convenient. To



Maben's Hot-Air Chamber.

the two sides of the box are fixed wooden supports which serve to receive teak spars for supporting drying trays or evaporating dishes. The bottom of the box has a perforation of 3 inches diameter into which a zinc cylinder (*B*) is securely fitted and to this is soldered the upper end of a copper cone (*C*) with a flat bottom, while into this latter a bent tube (*D*), diameter 2½ inches, and 9 inches total length, is securely inserted in the manner shown. A corresponding perforation is made in the top for receiving a tube to answer the purposes of a chimney.

Using a Bunsen burner or a spirit lamp as the source of heat, the flame is directed to the bottom of the cone (*C*) with the result that the heated air ascends into the chamber, being diffused by means of a dispersion board (*H*) about 4 inches square, which is placed over the orifice. At the end of the tube (*D*) there is fitted a "hit and miss" regulator (*G*), which consists of a series of triangle-shaped holes with a revolving disc behind so that the size of the apertures can be increased or diminished, thus enabling the amount of air entering to be under partial control. The highest temperature to which the air in the chamber has been raised is 180° F., which is sufficiently high for most pharmaceutical operations. If a uniform temperature of say 100° F. be required, the admission of air must be regulated accordingly by means of the regulator (*G*), accuracy being insured by the insertion of a thermometer (*M*) into a perforated cork fitted into a half-inch aperture on the top of the chamber. By this means there is no difficulty in keeping within 2.5 degrees less or more of the desired temperature.

If a rapid current of warm air is desired, this can be had by placing an angular tube (*K*) on the top of the chimney (*E*), and by heating the angle of the tube a draught is quickly created.

It is desirable in some cases to filter the admitted air; this can be done by stretching a piece of lint or other suitable material between the regulator (*G*) and the tube (*D*) by which means dust particles are effectually excluded.

The metal parts of the apparatus being made to screw off and on, they can be detached at will, so that we can thus have a series of wooden chambers suited to different purposes. In this instance, the chamber being intended for drying gelatin plates, it was of course constructed so that the light would be effectually shut out, but it is obvious that a small glass window would add greatly to its value for laboratory purposes.

The advantages of this chamber are its simplicity, its perfect security against overheating and its small cost—it can be made for a few shillings. It is light and easily handled and is always ready for work, a current of pure hot air being obtained in a very few minutes after the application of the Bunsen flame.

I find it specially adaptable in the preparation of granular and scale compounds, for drying precipitates, hardening pills previous to coating, and in other operations requiring a current of hot air.—*Pharm. Journ. & Trans.*

On the Preparation of Hydrobromic Acid.

BY THOMAS S. WIEGAND, PH.G.

HAVING a flask fitted with a cork, which is perforated to receive a tube reaching just below the cork, and rendered tight by waxing it, connect it by means of a piece of gum tubing with another tube bent at right angles; let the lower end of this tube dip to the bottom of a vessel which is shaped like a glass percolator, and, in fact, a glass percolator is best for the purpose, and this is closed at the bottom with a rubber stopper, and fitted with a close-fitting cap, through which the bent tube passes, and also another to prevent the gas from blowing off the cap. When these arrangements are made, a quantity of sulphide of iron is placed in the flask with some diluted sulphuric acid; this will supply the hydrogen sulphide.

The bromine and water having been placed in the percolator, the gas is permitted to pass through it until all the bromine has been converted into hydrobromic acid, which will be indicated by its loss of color and of the peculiar odor of bromine. The solution is then filtered from the sulphur and concentrated to the specific gravity of 1.077, which corresponds with a ten-per-cent solution, this being the strength indicated by the Pharmacopœia of 1880.—*Am. Jour. Pharm.*

A Solution of Corrosive Sublimate in Glycerin as a Substitute for Mercurial Ointment in Parasites of the Skin.

R. VIGIER recommends four or five parts of corrosive sublimate dissolved in one hundred parts of glycerin, in place of mercurial ointment, for parasites of the skin. It has been known for a long time that glycerin is not absorbed by the skin, and that it also prevents the absorption of medicines, and to a great extent that of corrosive sublimate. Therefore, on account of its greater cleanliness, and greater security from the absorption of mercurials, it is to be preferred to blue ointment.—*Pharmaceutische Centralhalle, Pharm. Record.*

On Dialysis Conducted with Employment of Chloroform Water, and on Dialyzed Albumen.*

THE process of dialysis has, during late years, been frequently employed in the study of albuminoids. The results were, however, often unsatisfactory, on account of the insufficiency of the conditions under which it was conducted. The failures may be attributed to the following three causes: 1. The liability of the substances to decompose; 2. the employment of parchment paper; and 3. the difficulty of examining the dialyzed substances.

The first difficulty was attempted to be overcome by executing the dialysis at the lowest possible temperature, in the shortest possible time, and by frequent change of the external liquid and the parchment paper. But each experimenter was thereby made directly dependent upon temperature and time, and therefore was never in absolute control of the experiment. In regard to parchment paper, every one who has carried on the process of dialysis knows how difficult it is always to obtain a good and uniform article. London furnished the best paper for this purpose, which was much superior to the German. But even the English paper could not always be relied on, particularly if large surfaces were needed. If we also take into consideration the feeble resistance of the paper and the necessity of frequently renewing it and of working only with small quantities of liquids with avoidance of pressure, it is surprising that this medium has been so persistently retained.

The investigations of the author being such as to necessitate the avoidance of any decomposition in the substances operated on, and to guard against loss by softening or tearing of the paper, he discarded parchment paper altogether, and selected animal bladder or gut. These were first soaked in water, then deprived as much as possible of fatty particles, and finally treated with several successive portions of ether. The prepared bladders or gut were then preserved under ether, in which they keep perfectly for years. In this manner, any desired stock of purified membranes may always be at the disposition of the operator, and one and the same bladder may even be used for several experiments.

As dialyzing menstruum (external to the membrane), the author uses chloroform-water, obtained by shaking water with chloroform in excess, and subsequently allowing to settle; also pure ether.

[While the author has in view merely the operation of dialysis performed upon solutions containing albuminoids, and with special reference to the subsequent analysis of the dialyzed substances, yet the *practical applicability* of the *improvements* described by the author *to many technical operations of dialysis* will at once suggest itself to the reader —ED. N. R.]

The applicability and advantages of chloroform water as dialyzing menstruum is based upon the remarkable antiseptic properties of chloroform even in minute quantities. This property of chloroform is well known, but it does not seem to have been sufficiently known that the same property attaches to chloroform water.

In the year 1849, Dr. Augend drew attention to the antiseptic properties of chloroform, particularly when compared with ether (*Journ. de Chim. Méd.*). He cited the following experiments: Three vials with well-ground stoppers were selected; a few drops of ether were poured into the first, a few drops of chloroform into the second, and the third vial was left uncharged. A piece of meat was then placed in each vial, and the latter closed. After a few moments already, the following appearances were noticed: The meat in the vial charged with chloroform had assumed a yellowish-red color; no change was observed in the vial containing the ether. After one week, the meat in the uncharged vial exhibited no change; in the vial with ether, the meat had assumed a dark tint, and in that with chloroform the meat appeared as if it had been boiled. On opening the vials, it was found that the meat in the first two vials was putrid, and had a fetid odor; that in the chloroform atmosphere was found unaltered, except that it had an odor of chloroform and a disagreeable taste.

These results induced Th. Schmidt, the chemist of the Kaukasian Mineral Water Administration in Piütiporsk, in 1866, to make a new series of experiments with the modification that chloroform water was substituted for chloroform. The results were perfectly satisfactory, a number of animal and vegetable specimens having been preserved for months without alteration in this manner. The author reported on the subject in 1867 at the meeting of the Russian Balneological Society in Piütiporsk, and recommended the use of chloroform water as an excellent vehicle for preserving histological specimens.

The author of the present paper has followed Schmidt's suggestion, and has used chloroform water with uniform success. Its utility and peculiar effects become evident from the examples cited by the author.

In autumn, 1871, some ripe and quite fresh grapes (with the stems and a few leaves) were suspended in glass jars filled with chloroform water and closed with ground-glass stoppers. After a few moments, the action of the water upon the grapes became noticeable. Currents were noticed to proceed from the surface of the grapes, gradually descending towards the bottom, and rendering the water faintly yellow. After a few days, the chloroform water in one of the jars was renewed; in the others, a few drops of chloroform were added, and the water stirred up. The action of the menstruum upon the grapes (and leaves) proceeded regularly; the tint of the light-colored grapes and of the green leaves gradually became brownish, then brown, while the tint of the blue grapes remained unaltered. In some of the jars, the menstruum was regularly renewed every eight days; two hundred *cc.* of the old menstruum were evaporated and tested for sugar in order to obtain data for the estimation of the rate at which the process advanced. It was thus ascertained that all the sugar was extracted after the menstruum had been renewed about twelve times. From this period the menstruum was but rarely renewed, and in some cases has been left unchanged for four years without any signs of decomposition showing themselves.

The author further describes a series of experiments made for the purpose of studying the successive stages of development of the silk-worm. The several specimens were arrested in their growth by being immersed in chloroform water, and after the water had been once renewed, preserved in the liquid without change.

If the substance to be subject to dialysis is not already inclosed in a natural membrane, or otherwise forms a natural unit, it must be inclosed in a membrane (animal bladder or gut), which is to be tied with white silk and suspended in a glass vessel partly filled with chloroform water. Dialysis will then immediately begin, and the process may be followed in all its details without the risk of decomposition. It is only necessary that the vessel be *well closed*, and that the dialyzing menstruum (the chloroform water) always retain the odor of chloroform.

If larger quantities of a substance are to be subjected to dialysis at one operation, it is to be feared that not enough chloroform water can penetrate through the membrane in time to prevent decomposition of the whole mass. In such cases it is well to add a definite volume of chloroform water to the substance itself before placing it in the dialyzer.

With the above-described process it will be found that all water-soluble substances will diffuse more or less rapidly, while all substances insoluble in water will remain behind unaltered in chemical nature or form.

The author very properly remarks that in many or perhaps most cases the dialytic process is much more complicated than it would appear at first sight. The principal process, that which alone is open to our observation, takes place at the point of contact of the dialyzing menstruum and the membrane. Inside of the latter, however, within the substance to be dialyzed, other dialytic processes occur between the contents of any single cells and the surrounding

* Die chemische Dialyse unter Anwendung von Chloroformwasser oder Aether, und ihre Bedeutung für die chemische Analyse eiweissha tiger Substanzen aus dem Thier- und Planzenreich. Von HENRICH STRUVE, *Journal f. prakt. Chem.*, 1883, 231.

liquid. In consequence thereof, the cells not only lose their water-soluble contents, but also absorb more or less of the dialyzing menstruum which produces contractions, coagulations, and other physical changes of the remaining contents of the cells, many of which may be followed and studied with the aid of the microscope.

[The practical application of the author's process is well illustrated by his experiments on egg-albumen, which may be the means of placing at the disposal of photographers and others requiring very *pure albumen* the desired article,]

DIALYZED EGG-ALBUMEN.

IT is well known that egg-albumen consists of large, tender, cell-like envelopes, containing a pale-yellowish albuminoid liquid of an alkaline reaction. In order to separate this liquid, the envelopes must be cut (with shears), the separated liquid diluted with water, strained and pressed through linen, and afterwards filtered. But the filtration of such a liquid is a very tedious operation, and never yields a pure product, which is also acknowledged by Hoppe-Seyler, who states that the cellular membrane of egg-albumen has not yet been properly isolated.

If perfectly fresh egg-albumen—such as is obtained immediately after the breaking of the egg-shell and separation from the yolk—be subjected to dialysis in a bladder, with chloroform water as menstruum, the *albumen will be found to dialyze with remarkable rapidity* until the last traces have passed through the membrane. It is only necessary to renew the chloroform water from time to time, and to test for the end of the process by taking a small volume of the dialysate and evaporating. If this leaves only a trace of a residue, the aqueous solution of which scarcely reacts with tannin, and which leaves only faint traces of ash, the process may be regarded as terminated.

The different diffusates or dialysates are perfectly clear, and have an alkaline reaction. When heated, and even when boiled, *no coagulation* takes place; but traces of hydrosulphuric acid are given off which may be detected by acetate of lead, and may be more amply developed by acetic acid. If the clear solution, however, be treated with acetic acid *before being boiled*, albumen will separate, but without the escape of hydrosulphuric acid, even on boiling.

All these diffusates may be evaporated on the water-bath without any coagulation or opalescence; and if the concentrated liquid be finally completely dried in a rarefied atmosphere over sulphuric acid and chloride of calcium, the albumen is obtained in form of a glassy, faintly-yellowish mass, which is completely soluble in water.

The author has also experimented with *ether* as dialyzing menstruum. In this case he observed that the solution and extraction of substances soluble in ether contained in the interior of the object suspended in the liquid (as grapes, cherries, small animals, etc.) was accompanied by an expulsion of all water, together with the substances soluble in the latter. [In fact, the author arrived at the same conclusions which were already in 1876 made the basis of a process for extracting the soluble substances from fresh drugs. The process was devised by Legrip under the name of "dietheralysis," and is described in NEW REM., 1876, 168 (from *Répert. de Pharm.*). Mr. Schmidt appears to have remained in ignorance of the existence of this article. As the latter portion of Mr. Schmidt's paper is less likely to be of practical interest to our readers, though very much so to physiological chemists, we content ourselves with referring for further details to the original.—ED. N. R.]

Microchemical Reaction Methods.*

BY A. TSCHIRSCH.

THE author describes the great advantages of the microscope in technical chemistry, especially in the examination of food, and expresses regret that many chemists consider their laboratories complete without such an instrument. He enumerates many examples of its usefulness, such as starches, textile materials, etc. Even in the domain of pure chemistry its application is necessary in the hæmatin reaction for the detection of blood stains, the composition of urinary deposits, the search for strychnine, atropine, etc.

These advantages led to its more extensive employment in pure chemistry, and the name of microchemistry was given to it by Döbereiner. The author thinks that microchemistry must always be distinguished by a series of color reactions; that in the same manner as the changes of color, etc., in experiments on the large scale are examined in the test tube, so must they be similarly observed on the slide of the microscope. The actual process is simple. The objects to be examined must be either in thin sections, fine powder, or as fibres. A drop of the reagent is placed on a slide, and allowed to flow slowly towards the object, the operator observing through the instrument. Many physical as well as chemical changes may thus be detected—expansion or contraction, refractive changes, commencement of coloration, evolution of gas bubbles, solution, etc. The iodine starch reaction of Stromeyr was the first to be employed with the microscope. From it is learned the topography and division of starch in plants, the way it is stored up, and the process of its conversion. This reaction has also taught the difference between pure cellulose and woody fibre, and the nature of intercellular substance. The reactions with zinc chloride and iodine and with sulphuric acid and iodine are also striking instances of the value of microchemistry, affording an easy method of distinguishing vegetable from animal fibres, the first coloring pure cellulose violet, and the second dissolving it with an intensely blue color, the lignin encrusting the fibres having been previously removed by maceration in nitric acid, alkalies, or Schultze's maceration fluid. Thus, sulphuric acid and iodine stain cork dark-yellow, thereby affording a trustworthy test for all membranes or sections containing suberin. The solubility of pure cellulose in "cuoxam," [*cu-ox-am* = copper-oxide + ammonia] discovered by Schweitzer, is also credited to microchemistry. The reagent may be prepared by digesting copper turnings in concentrated ammonia, or by decomposing a concentrated solution of copper sulphate with ammonia until the precipitated hydroxide is redissolved.

The maceration process of Schultze is a valuable aid to operations in microchemistry. The substance is treated with nitric acid and potassium chlorate, either in the cold or, in cases of obstinate samples, is boiled for a short time, when the cells are isolated by the solution of the intermediate lamellæ. Amongst the instances given of its utility in food analysis is the separation of those peculiar cells of radiating branchial form which exist in the tea-leaf, and are not found in other leaves used for its adulteration. (They are, however, found in some of the Camellia family.)

This treatment has also the advantage of dissolving the colored incrustations of cinnamon, roasted coffee, etc., and leaving the substances ready for further examination. Potash plays an important part in microchemistry, as it renders many objects transparent which are not made so by other reagents. It was by successive treatment with potash solution, acetic acid, and iodine that Böhm was able to perceive in chlorophyll the small particles of starch which had hitherto escaped observation. The most striking success in the science is that of Sachs with Trommer's sugar test, which, with slight modifications, enables the microscopist to identify, and even estimate quantitatively, cane- and grape-sugar, dextrin, gums, and albuminous substances in single cells.

The author alludes to the tinctorial methods which are employed in the examination of microbes, but which do not come under the strict domain of chemistry; he urges more extensive use of the microscope, together with the micropolariscope and spectroscope, and the study of botany and physics amongst chemists.

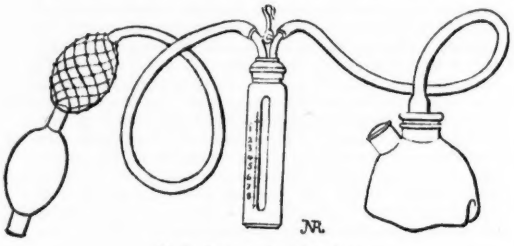
* From the *Arch. d. Pharm.* (3), XX., 8 H. *Journ. of Chem. Soc. and Pharm. Journ.*

Baumé's Scale and the French Codex.—It has been decided to adopt for the new codex, in respect to degrees of Baumé, the experimental results of Messrs. Coulier, Berthelot and d'Almeida, published in 1873.

Two new Anæsthetizing Apparatuses.

JUNKERS' apparatus, described in the *British Medical Journal* of April 28th, 1883, consists of three main parts. A bottle holding about two ounces, closed by an air-tight fitting top, through which two tubes are made to pass, a long one, connected with a Richardson's bellows, and a short one, connected by means of India-rubber tubing with a vulcanite face-piece. The bottle for holding the anæsthetic fluid is covered with leather, and the lower half is graduated for eight drachms. The face-piece is provided with an inspiratory and an expiratory valve.

When using the apparatus, from four to six drachms o chloroform or bichloride of methylene should be poure into the bottle according to the expected duration of th operation; it is then suspended from a button-hole in the



Junker's Anæsthetizing Apparatus.

coat of the administrator By each compression of the bellows about 4.33 cubic centimeters of fresh air is forced through the long tube into the fluid, and excapes impregnated with the vapor in proportion to the contents of the bottle, through the short tube into the face-piece.

During the use of this apparatus, fresh air impregnated with fresh narcotic vapor, is brought into the face-piece with each compression of the bellows, and if the latter be correctly timed, so as to correspond with each inspiration, the whole of the vapor is inhaled, and on each expiration the exhaled air escapes through the valve and at the edge of the face-piece, so that the patient does not inhale his own breath. The patient has not to breathe through this apparatus as is the case with most inhalers. An air-tight fitting face-piece is therefore not required, and the free and natural breathing of the patient is not interfered with. The required amount of narcotic vapor is brought before his nose and mouth by compressing the bellows at each inspiration, and the additional amount of air necessary to fill the lungs enters freely at the inlet valve and at the edge of the face-piece.

The administrator has complete control over the anæsthetic, the quantity of supply being regulated by the quality of pressure of the bellows, and amount of fluid in the bottle.

DR. S. COOPER has invented a new ether-inhaler, which is economical, convenient, and, above all, it prevent the excessive stimulation of the bronchial tubes by the ether.

The ether employed is absorbed by a material packed in the central circular chamber *C*, and a grated strainer, *B*, prevents the packing from slipping out. A removable stopcock, *A*, admits the ether through a small funnel surrounding the prolongation of the stopcock. Four fluid ounces of ether is easily taken up by the filiing, and the inhaler can be held with the funnel downward, yet no dripping will occur. After filling, the stopcock, with the rubber tube attached, is screwed on firmly. Surrounding the ether chamber is a jacket, *E*, into which *hot water*, to the amount of six ounces, is poured, through the small funnel shown at *D*. A screw-cap is then fastened, and the apparatus is ready for use. To the end of the rubber tube running from the stopcock *A* is attached a compression-bulb, by which atmospheric air ir pumped through the apparatus, and along the flexible tube at the other extremity to the face-piece, which fits snugly over the mouth and nose. This shield is made of flexible metal, bound around the edge with soft rubber which admits of close contact without undue pressure. To the upper part of the cylinder, on the either side of the central inlet, rings are attached for the attachment of a suspending strap, which enables the administrator to use his hands for other purposes.

The shield being properly applied to the mouth and nose, the bulb is to be compressed at each inspiration, and at no other time. This secures a current of ether vapor mixed with air at the temperature of the lungs. No waste occurs, an illustration of which is shown by the fact that a patient has been keep profoundly anæsthetized for two hours with the expenditure of only six ounces of ether.

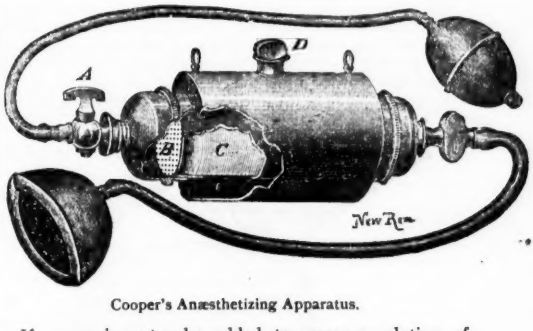
[The essential features of this inhaler were patented on the 1st of May, by Charles Hilbert, of Sing Sing, N. Y., assignor to himself, John J. Mahaney and Joseph Stern, of the same place; the number of the patent is 276,968.—ED. N. R.]

[ORIGINAL COMMUNICATION.]

Tests for Sulphides and Ammonia.

DEAR SIR:—While engaged in verifying the reactions for chloral hydrate, which I wish to add to a new translation of Beilstein's "Anleitung zur qualitativen Analyse," in which I am at present engaged, I found that one of the reactions can be modified so as to detect small quantities of sulphuretted hydrogen and of soluble sulphides, and also *minute quantities of ammonia.*

The reaction for chloral (given in the U. S. P.) is as follows: When a small quantity of aqueous solution of chloral hydrate is mixed with ammonium sulphide, a red-brown color is communicated to the solution, which, on standing, becomes turbid, and finally deposits a brown precipitate. Addition of acetic acid hastens the precipitation and develops a peculiar penetrating odor.



Cooper's Anæsthetizing Apparatus.

If ammonia water be added to aqueous solution of chloral, we get a reagent which detects sulphuretted hydrogen by the coloration communicated to solutions containing only a small quantity.

If, on the other hand, to a small quantity of chloral hydrate freshly prepared sulphuretted hydrogen water is added, a slight turbidity is occasioned, which does not interfere with the use of the reagent. A single drop of ammonia water in half a litre of distilled water gives, on addition of the sulphuretted chloral solution, a very distinct yellow color to the whole mass.

Very respectfully, CHAS. O. CURTMAN.

3718 North 9th Street,
SAINT LOUIS, MO., June 5th, 1883.

To Detect Soda in Milk.

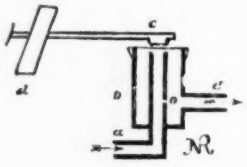
ADD three or four cubic centimeters of tannin solution to about fifteen cubic centimeters of (alkaline) milk. A green color will appear after eight to twelve hours if soda is present. Dilute acetic acid will then turn the color to an unstable red.

Automatic Heat Regulator.

BY GEORGE M. STERNBERG, SURGEON U. S. A.

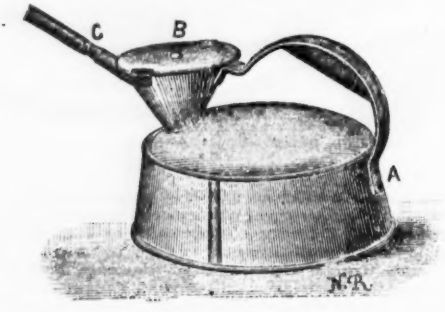
In the March number of New Remedies (p. 69) is a brief account of my automatic heat regulator, with figures, taken from the *Scientific American* of August 27th, 1870. It is but fair to the readers of this account to say that I subsequently found it better to substitute a simple valve for the clock-work apparatus shown in Fig. 3.

When a kerosene or alcohol lamp is used as the source of heat, a nicely balanced brass valve, operated by an electro-magnet, is made to shut off a portion of the flame, when the circuit is closed by the rising of the mercury in the tube of the thermometer. When gas is used, a valve controlling the supply to the burner is in like manner operated by an electro-magnet.



For this purpose I have devised a valve which is extremely simply and answers the purpose admirably.

The accompanying figure will illustrate its construction The bent tube *a* is connected with the gas supply by a piece of rubber tubing. The upright arm of this tube is inclosed in a larger tube, *b*, having an outlet, *e*, which is connected with the burner. The upper end of this larger tube is closed by means of a piece of sheet-rubber, and when this is depressed by means of the lever *c*, the flow of gas through the valve is arrested. The lever *c* has attached to it the armature *d*, and is operated by an electro-magnet under the control of the regulating thermometer. To prevent the flame at the burner from being entirely extinguished every time the valve is closed, a small aperture, *o*, is made in the upright arm of the bent tube *a*.



A New Inhaler.

In certain affections of the air passages, it is sometimes customary to administer, by inhalation, medicated vapors. The appended illustration from *Le Monde de la Science* shows a simple apparatus calculated to be very serviceable for this purpose: A contains boiling water; B holds the herb or other medicinal substance, and C is a tube connecting with the vessel A through the medium of B. The vessel A should be but partly filled with water, and its shape enables it to be placed on a hot plate or into a vessel of hot water, so as to keep up the temperature of its contents, if necessary.

Colored Insect Powder.

BY W. L. HOWIE, PH.C., F.C.S.

Mr. Conroy has done good service in calling the attention of the trade to the adulteration of insect powder in the paper read before the Liverpool Chemists' Association and published in a recent journal. I have been working on the same subject for some time past, and as my experience and results differ from Mr. Conroy's, I think it well, without further delay, to throw my notes into form for publication.

The adulterant mentioned in the report of the Liverpool meeting as having been found by Mr. Conroy is fustic, which is one I have not met with, although particularly looked for. I have not yet, however, hit upon a satisfactory method by which one can readily detect small proportions of this substance, as well as other yellow dye stuffs, which I have reason to suspect are used to "reduce" the powder. I have found microscopical examination unreliable, artificially colored insect powders, to my knowledge, being passed as genuine even by a skilled microscopist, and I have found comparison with test samples prepared by blending various pigments with genuine powder in a mortar very misleading, as little difficulty is then experienced in detecting the specks of the coloring ingredient, but in the commercial powders the pigment is without doubt added during the grinding process, and if well selected, becomes so incorporated with the vegetable tissue as to escape any but an experienced eye, even when aided with the polariscope. I have, therefore, not relied upon the microscope as far as my investigation has proceeded, finding chemical method more exact and trustworthy.

I have examined about twenty samples, none of which was supplied to me specially for examination, but purchased in packets, or obtained as *bonâ fide* samples, offered by wholesale dealers to retailers in the ordinary way of business. With the exception of No. 3 following, all are powders from well-known firms, most of whom claim to be grinders. Selecting twelve as typical, both as to source and general character, I placed them side by side and arranged them according to their depth of yellow color, with the following result:

No.	VENDOR'S DEFINITION.	COLOR.	ADULTERANT.
1.	"Insect Powder"	Drab	Genuine.
2.	" " "	"	"
3.	....	Olive drab ..	"
4.	"From closed Flowers"	Yellowish...	"
5.	"All closed Flowers"	" ...	"
6.	"Open Flowers"	" ...	"
7.	Packet Powder.....	Yellow.	Chrome.
8.	" "	"	"
9.	"Opt"	"	"
10.	"All closed Flowers"	"	Turmeric and chrome.
11.	"Foreign".	"	Chrome.
12.	"Dalmatian"	Very yellow.	Turmeric.

After arranging the powders in this manner by the eye, it was apparent that between the colors of 6 and 7 there was a perceptible gap, and when by testing it was proved that Nos. 7 to 12 were artificially colored, it will be seen that appearance is some indication of genuineness.

For further examination I discarded the first suggested plan of igniting the powder with potassium nitrate and testing the residue, and prefer what I think a more delicate and easy, if somewhat crude method. Incinerate say 20 grains of the suspected powder on platinum foil and carefully weigh the ash as well as note its character. For example, take No. 3, which had been reduced to powder in

a mortar by myself from authenticated flowers. The ash was gray in color and weighed 1.2 grain. This is placed in a test-tube, and a few drops of strong hydrochloric acid added, which causes some effervescence; heat is then applied to dissolve the ash, which consists chiefly of potash salts. The solution is colorless and the addition of a little water prepares it for the application for the usual tests.

Sulphuretted hydrogen gives no precipitate nor potassium iodide a yellow color nor precipitate; but it ought to be here noted that ammonium sulphide and potassium ferrocyanide give the characteristic reactions indicating iron, which I found in small quantity in the ash of the genuine flowers, as well as in all the powders. This metal seems to exist in greater abundance in the florets, and in much less proportion in the seeds, and the indications of iron must be noted, as I have found two powders containing it in such quantity as to suggest that some ferruginous earth, such as ochre, had been used to make weight or color. One of these powders is a proprietary article, and the other a small odd sample, which I cannot replace, therefore neither appears amongst the selected twelve.

The behavior of a powder colored with the usual adulterant, viz., yellow chrome, is quite different. The ash is brownish, or showing brown patches at the most exposed parts and the weight is greater; thus No. 7 yielded 2.1 grains. There is the same effervescence with HCl; but part is insoluble and the solution on heating becomes distinctly green, which with a black precipitate with H_2S may be taken as conclusive proof of the presence of lead chromate. KI gives a yellow color, and if the HCl be not in excess a yellow crystalline precipitate separates.

Any attempt to judge of the amount of added chrome by estimation of the lead present I found futile, which is readily understod when it is remembered that the finer chromes are said to be "struck" on magnesia, and undoubtedly the alkaline earths are found to bulk largely in the composition of many.

No. 12, although of a strikingly deep yellow color, gave only 1.2 grain of gray ash, and thus suggested that some vegetable coloring had been used, and on the sample being tested by the method devised by myself for the detection of artificial coloring in rhubarb and other powders (*Pharm. Journ.* [3], vol. iv., 354) the supposition proved to be correct.

Pieces of white blotting paper corresponding to the number of samples are taken and named or numbered, and a few grains of the suspected powder placed in the centre and pressed compactly down with a piece of paper or a spatula. Chloroform (or other menstruum) is then carefully dropped from a pipette on the centre of the powder till it has moistened all and extended some distance beyond the powder. The paper is then allowed to dry, wiped free of the powder, and the stain, if any, tested by suitable reagents.

Treated in this manner the genuine powder yields a slight yellow color to the paper; but No. 12, and in less degree No. 10, gave a very distinct stain, which an atom of boracic acid and a drop of HCl at once identified as due to turmeric. The stain from genuine powder becomes bluish green with nitric acid, brownish with sulphuric, and only exhibits a slight darkening wish potash solution. The turmeric stain becomes reddish-brown with nitric acid, dark-brown with sulphuric acid or potash. Fustic seems to yield nothing to chloroform, but a yellow stain obtained with alcohol becomes a distinct brown with nitric acid and shows little change with sulphuric acid or potash. Solution of a ferric salt strikes a bluish black both with the fustic and pyrethrum stain obtained with alcohol.

When fustic is boiled for some time in water with zinc and sulphuric acid, the solution gradually assumes a bright red color owing to the transformation of one of the coloring principles, morin-tannic acid, into phloro-glucine and machromine.

The flowers of *Pyrethrum cinerariæfolium* treated in the same fashion show no change, but I have been unable to get this very promising reaction to indicate distinctly anything under 20 per cent of fustic in insect powder, although I am hopeful that an improved method may yet result in greater delicacy.

No.	Percentage of ash.	No.	Percentage of ash.
1	6.2	7	10.5
2	7.1	8	9.6
3	6.	9	9.2
4	6.8	10	8.0
5	6.2	11	9.4
6	6.2	12	6.0

The above table shows the percentage of ash yielded by the twelve samples, and comparing that with the names given by the vendors little relation will be observed between them. From more exact analysis I take the first six to be genuine powders, with the exception of No. 6 which has a suspicion of some dye wood, which I have not yet identified, attached to it. Numbers 7 to 11 are adulterated with chrome from 3 per cent to nearly 6 per cent. No. 10 has the addition of a very small percentage of turmeric, and No. 12 quite 5 per cent of that root. It is not to be assumed that excepting these slight admixtures these powders are genuine; for although undoubtedly it is bad enough when having ordered a hundredweight of insect powder one finds 5 to 7 pounds of chrome yellow, costing 4*d.* to 10*d.* per pound, as part of the delivery, the presence of such extraneous color is suggestive of its being merely a cloak for a more weighty adulteration, such as Mr. Conroy has discovered: or as that referred to by Mr. E. V. Riley (*Pharm. Journ.* [3], vol. xii., 789), who says that "the stalks and leaves are ground with the flowers in the proportion of one-third of their weight;" whilst on the authority of H. Kalkbrunner (*Pharm. Journ.* [3], vol. v., 305), "The plant itself (minus the flowers) powdered appears to be quite inactive."

In face of the foregoing facts it seems advisable that purchasers should avoid the foreign powder, which seems to be always colored, and not too trustingly accept any guarantee, even of professed grinders, but verify for themselves each purchase, which by the means above stated can readily be done in a few minutes even by a junior assistant.—*Pharm. Journ. & Trans.*

Further Note on Abrus or Jequirity.

In a letter addressed to Mr. Pasteur, and read at the session of the Académie des Sciences of May 14th, 1883, Dr. L. de Wecker says:

"I have, on a previous occasion, expressed the opinion that there exists a peculiar ferment in the infusion of Abrus precatorius, which continues its action upon the human mucous membrane.

"At my request, Prof. Sattler has searched for the active principle of jequirity, and he has found that the infusion of the seeds contains a bacillus which, when brought in contact with the conjunctiva, develops in abundance upon it and on the croupous membranes which the lotion produces. Prof. Sattler has cultivated the bacillus, and has proven that subsequent cultivations of it produced the same ophthalmia as jequirity, while a sterilized infusion (from which the bacilli had been removed) had no longer any action.

"This fact appears to me to be of great importance for the study of virulent diseases, and represents *the first example of an authenticated transmission of an infectious disease by a plant.*"

Strawberry Pomade.

Fresh, ripe strawberries	4 parts
Fresh lard	25 "
Fresh tallow	5 "
Alkanet	q. s.
Oil of rose	q. s.

The strawberries are put on a straining cloth and the lard and tallow previously melted and heated to 100° C. (212° F.) and tinted red with alkanet poured over them. The strained mass is stirred until it begins to set, and for each 2 pounds of product, 1 drop of oil of rose added.

Milk Analysis.

THE following method, described by Eug. Peligot in *La Nature*, though presenting nothing new in the modus operandi, yet offers useful suggestions for the arrangement of apparatus to conduct a series of milk analyses at one and the same time, and also enables us to append a note detailing an improvement.

A certain volume of milk, measured with a graduated pipette, is evaporated in a water-bath, and the dry residue, after having been weighed, is treated by ether to dissolve the fatty matter. The solution is then evaporated and weighed. From the undissolved material, which is a mixture of lactose and casein, the lactose is dissolved out by means of water, and the casein is collected on a filter. The casein is then weighed in its turn, after having been dried in a stove.

I have made use of this process in the analysis of asses' milk, and, save a few modifications in details, it is the one employed in the examination of the numerous samples of cow's milk that are collected by the authorities in the markets of Paris. The object of this examination is to guarantee the consumer against the so frequent frauds to which this food product is subject. Among such frauds, the most usual is the *extension* of the milk by the addition of more or less water. The weight of the residue left by desiccation in the water-bath suffices in most cases to expose this mode of deception. The process is as follows:

The density of the milk, taken by the lacto-densimeter, gives a preliminary indication to set us on the track of the falsification. Then, by means of a graduated pipette, ten cubic centimeters of it are removed and evaporated to dryness in a flat-bottomed porcelain capsule that has been previously tared and numbered. This desiccation requires four or five hours. With a water-bath like that shown in Fig. 1, nine samples of milk may be dried at once.

After it is ascertained that desiccation is complete, and two successive weighings have given the same result, the residue is put by till the next day. The treatment with ether is not performed at once because the material detaches itself, when it is very dry, in scales that it is difficult to divide without loss. But by the following day the residue becomes less brittle on absorbing a little water, and it is then placed in a tube open at the ends, containing loose cotton at the contracted lower part, and washed three times with ether containing ten per cent of water.

The ethereal liquid, which is received in a tared porcelain capsule, is left to spontaneous evaporation. The butter that remains after desiccation in the air and water-bath is weighed, and the difference gives the lactose and casein.

By the aid of these data is ascertained the quantity of water that, in case of fraud, has been added to the milk. It is agreed that unsophisticated milk should contain, on an average, 87 of water and 13 of dry matter. In order to know the quantity of normal milk, and, consequently, the quantity of water added, say in a sample that has furnished ten per cent of dry matter, we take the proportion

$$13 : 100 : : 10 : x,$$

where x equals the weight of the normal milk, or 76.9. The complement, 23.1, represents the water added.

In order to render the desiccation more rapid, and for the purpose of obtaining a residue that is more permeable to ether, the advice has been given to add to the milk an inert material, such as plaster, sand, sulphate of magnesium, etc. The substance which appears to be most suitable is the pulverulent alumina that is obtained by the calcination of ammonia alum, and two grams of which are added to each ten cubic centimeters of milk.

The proportion of lactose is ascertained with milk that has been diluted with twice its volume of water. There is no need of first separating the other elements. The reagent employed is a tartro-alkaline liquor of copper, which, under a determinate volume, is decolorized by the diluted milk introduced by means of a graduated burette. This liquor should have been previously titrated with a solution of lactose containing one-half to one per cent of this substance in a pure state. The polarimeter has likewise been employed for the determination of the lactose, but the results given by the apparatus are not accurate, as the milk contains other materials that have an action on polarized light.

The presence of starch, oils, etc., is recognized by means of the microscope. The mineral substances that

FIG. 1.

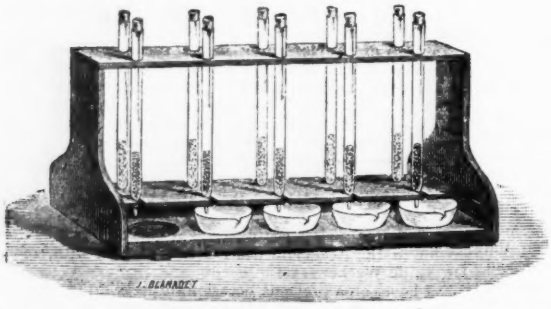


FIG. 2.

Peligot's Apparatus for Testing Milk.

The milk which is consumed in such great quantities in large centres of population is the object of numerous manipulations. At Paris the greater part of this aliment comes from the environs of the city and from localities on lines of railways within a radius of from eighty to a hundred kilometers. Normandy and Brie are the two regions that furnish most of it. There are, besides, within Paris, a certain number of cow-stables which, by reason of the bad feeding of the animals, give, most of them, a poor and middling quality of milk.

Milk derived from the exterior, says Mr. Pabst, is rarely diluted, for it would be useless to pay freight charges on the added water. But the adulterators, who formerly were content to merely skim the milk and replace the removed butter by flour, have to-day organized into associations, each of which works within a special region. The producer brings his milk, which is then skimmed and mixed with a quarter or a fifth of artificial milk, and afterward sent to an associate or depositary at Paris, who dilutes it with water and sends it to the customers. Such manœuvres introduce into milk elements that are foreign to its composition. The products employed for the purpose are oils, sulpholeates, ground malt, and sheep's brain.

[? This and a portion of the succeeding paragraph smacks of newspaper sensation.—Ed. N. R.] What is important, in fact, is to give the milk the opacity and yellowish color that were due to the cream that was removed.

The oils that are frequently made use of emulsify well in milk, but they offer the disadvantage of forming small drops on the surface of liquid when the latter is heated. Sulpholeic acid, a residue in certain operations connected with dyeing cotton, furnishes more stable emulsions. There is also much employed a "concentrated milk," which is manufactured in enormous quantities in Switzerland, and which is obtained by evaporating milk to a syrupy consistence after having added to it quite a large quantity of ordinary sugar. This is added to the milk after it has been redissolved in three or four times its weight of water. This addition is recognized by the presence of the sugar in the milk thus mixed. Lactose reduces the tartro-alkaline liquor of copper, upon which ordinary sugar exerts no action, After the interversion of the latter by an acid, its proportion, ascertained by this same liquor, may be deducted from that of the lactose which has been previously determined, and which alone pre-exists in normal milk.

Note by Ed. New Rem.

The manipulation described in the first portion of the preceding paper is, in the main, that employed by most analysts. Yet the long time required to get the brittle and adhesive cake left after drying the milk into a condition to be readily removed, and the difficulty of completely detaching and powdering the hard scale without loss, is a serious disadvantage. Many analysts prefer to mix the milk with fine, well-washed, and thoroughly dry sand, to dry the mixture and, after ascertaining the loss of weight (equivalent to the water it contains), to treat this mixture with ether. One of us has, however, for a number of years past used the following method which combines both of the above. One sample of the milk is mixed with dry sand and desiccated in the usual manner, care being taken to break up the skin which soon begins to form on the surface and to frequently stir the mixture thoroughly so as to render it porous. Another sample (about 5 gm.; but it need not be weighed) is, at the same time, poured into a broad flat-bottomed capsule, and also desiccated. The skin which soon forms on the surface of this layer is frequently broken with a sharp glass-rod, so as to prevent it from adhering too closely to the sides and to prevent moisture from being held back below its surface. The stirring, in either case, will be required only about during the first half-hour when the samples may be left to themselves. The second sample (containing no sand) is then taken from the drying apparatus, and allowed to cool. It will then be sufficiently brittle to be readily powdered. The powder is spread again, in a thin layer, upon the capsule and the latter once more desiccated. Only a short time is now required to expel all moisture. The contents of the capsule are then transferred to a dry glass-stoppered vial, the whole weighed when cold, an aliquot part poured into a glass-mortar, and the vial weighed again. The difference gives the amount of dry milk-solids in the mortar. This is now thoroughly triturated with fine sand and transferred to a small percolating tube, to be exhausted with ether in the usual manner. While this is going on, the capsule containing the mixture of milk and sand is weighed, and, when the weight is constant, the amount of water is found by simple subtraction. From the amount of butter found in the known quantity of dry milk-solids taken in the other case, the quantity of butter contained in the second sample is readily calculated.

Numerous check trials made upon the same milk, by determining the water and butter in the *same* sample, or by using *separate* samples for each, have shown that the latter method yields equally accurate results, while it has this advantage that it permits much more rapid exhaustion with less risk of loss.

If the lactose and casein are also to be determined, the percolation-tube, as soon as charged with the mixture, is exposed for a short time to the heat of a drying oven, then cooled and weighed. The weight of the dry milk-solids being known, the rest is the weight of tube, sand, etc. The butter-fat having been extracted, boiling alcohol is poured on which dissolves the lactose. The tube is then again dried until it ceases to lose weight and the weight in excess of the original tare of tube, sand, etc., represents the casein. Of course, the ash, found by direct determination, must be deducted from this, and the quantity of lactose must be diminished by the amount of ash left after its combustion. But it is unnecessary to specify all these details here, as they are well-known. Our object was merely to draw attention to the modification, consisting in determining the water and the butter in two separate samples of the same milk.

Preparation of Tribromide of Arsenic.

Mr. Frank L. Slocum, of Strassburg, Germany, criticises the formula for aqueous solution of arsenious bromide ($AsBr_3$) given by R. F. Fairthorne in the *Amer. Jour. of Pharm.* for January last, and gives the following formula of J. Nicklés* as the correct one:

"To one part of bromine, dissolved in two parts of carbon disulphide, finely-powdered metallic arsenic is added in small quantities, each time shaking till dissolved. This is continued until no further decoloration takes place, when the solution is filtered and allowed to crystallize." Pure $AsBr_3$ forms colorless hygroscopic crystals, having the s.g. 3.66 (Bordecker); melting point, 20° to 25° C.; boiling point, 220° C. It distils without decomposition, and sublimes in crystals. The precaution to be used in this method is to have the bromine and carbon disulphide perfectly dry. Commercial bromine contains water, chlorine, iodine, tetrabromide of carbon, and undoubtedly bromoform. The presence of these last two are what gave Mr. Fairthorne's aqueous preparation its smell of chloral. Further, commercial arsenic contains at least arsenious anhydride (As_2O_3), and a suboxide (As_4O ?). Each of these impurities, by Mr. Fairthorne's process, leads to a product of a different composition than $AsBr_3$, and gives a finished product which must contain either an excess of free bromine or arsenic. $AsBr_3$ is not volatile at ordinary temperatures, as it is a solid. The crystallized compound will form in moist air, but gives off only hydrobromic acid gas. —*Amer. Jour. of Pharm.*, May.

Amussat's Laxative Syrup.

Guaiac wood, rasped	100 gm.
Chicory root	100 "
Burdox root	100 "
Peony root	100 "
Fumitory herb	100 "
Pansy herb	100 "
Senna pods	500 "
Honey	3 kilos
Sugar	4 kilos
Water	q. s.

Infuse the drugs with 5 kilos of boiling water; after twelve hours, express and repeat the infusion with 3 kilos of boiling water; unite the liquids, strain, add the honey and sugar, and boil the liquid down to 31° Baumé (spec. grav. 1275).

The above specialty is used for habitual constipation. The composition is given by the *Gazette hébdomadaire*, quoted in *Pharm. Centralh.*, No. 3).

Caustic Lime as a Solvent for Gum-Resins.

A weak (7½ per cent) solution of caustic lime serves (according to *Ph. Centr.*) as a useful solvent for many gum resins, allowing the solutions to mix with water without precipitation. The proportion that may be dissolved are: Aloes, 1 in 15; ammoniacum, 1 in 4; assafœtida, 1 in 15; catechu, 1 in 10; guaiacum, 1 in 7; myrrh, 1 in 5; opium, 1 in 10.

* Compt. Rend., 48 (1859), p. 837.

Simple Apparatus for Making Ethereal Tinctures by Percolation.

BY JOHN CALVERT.

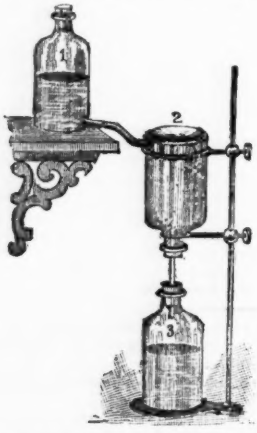
VESSELS 1 and 2 are ordinary quart douche bottles; No. 3 is a common quart flask; Nos. 2 and 3 are fitted with corks, through which one piece of glass-tube is passed.

No. 1 is the reservoir; No. 2 is the percolator; No. 3 is the receiver.

The lower orifice of No. 1 is connected with No. 2 by means of a short piece of vulcanized rubber-tubing.

The receiver is marked to indicate a pint.

To make a pint of ethereal tincture of cantharides, or blistering liquid, sixteen Troy ounces of powdered cantharides are put into the percolator; a plug of tow is inserted in the neck, followed by the cork carrying the glass tube. The bottle is inverted, and its contents packed as closely as possible by gently slapping the sides of the vessel with the hand. The side orifice near the bottom of the percolator is then connected with the reservoir by means of the rubber tube. The reservoir stands on a shelf; the percolator is supported by the rings of a retort stand. The cork of the receiver is first slipped on to the glass tube of the



percolator, and then brought down into the neck of the receiver. The cork should have a small escape-hole in it. The apparatus is now ready.

The ethereal mixture, consisting of a pint of rectified ether and three ounces of acetic ether, is poured into the reservoir, and the cork inserted. The flow is determined by raising the cork of the reservoir from time to time. When the ethereal liquid has completely permeated the powder, the supply of ether is stopped. The drug should be allowed to macerate for a few hours, after which the percolation may proceed, drop by drop. A pinch-cock on the rubber tube will regulate the flow. As soon as the reservoir is emptied, half a pint of alcohol is poured in, and, when again empty, water is employed to finish the displacement.

If a steady stream of the menstruum is desired, a small piece of glass tube is passed through the cork of No. 1, and connected by means of rubber hose with a similar piece through the cork of No. 3. Equilibrium is thus maintained.

The exhausted powder may be removed from the percolator by means of a stream of water, which is injected through the smaller orifice by the aid of a hose attached to the faucet of the water supply.—*Proceed. of the Calif. Pharm. Soc. and Coll. of Pharm.*, 1883, 40.

Lumbago may be quickly relieved (*Scientific American*) by binding a piece of oil-skin cloth, such as is used to cover tables, over the loins outside of the flannel shirt. Profuse perspiration is produced, which rapidly relieves the pain.

Testing Oil of Rose.

GMEINER gives the following test: Put one drop of the oil of rose into a dry test-tube, and add four drops of concentrated sulphuric acid. A perceptible rise of temperature takes place, and the mixture must be allowed to stand until it becomes cool. Two grams (thirty-one grains) of absolute alcohol are then to be added, and the mixture well shaken. When the oil is pure, the mixture will be slightly opalescent, and on heating it will turn yellowish-brown; this color will persist on cooling the solution. When the oil has been mixed with geranium, pelargonium, or palm-rose oils, the solution will be turbid, and an insoluble precipitate will soon form. Pure rose-oil retains its characteristic odor when subjected to this test, but the mixture with these other oils evolves unpleasant odors.

When fatty oils, such as sesame, almond, etc., are used as adulterants, the usual test made by placing a drop on white paper and heating over an alcohol flame shows their presence in the greasy stain which remains. Pure rose oil is entirely volatile.

Glucose or Grape Sugar.

PROF. PETER T. AUSTEN, of Rutgers' College, New Jersey, writing on the subject of glucose in the *Sanitary Engineer*, says: "This communication is in reply to questions submitted by those interested in a legitimate industry which has been so assailed and misrepresented that many persons entertain very erroneous opinions regarding the history, process of manufacture, and healthfulness of glucose.

"The terms 'glucose' and 'grape sugar' are but different names for the same thing, the former designating its solution in water and the latter its solid condition. Both are produced from starch, which, by a simple chemical process, is converted into sugar.

"The change is but a slight one, as the chemical elements of starch and of sugar are identical in kind, varying only, and that to a very small degree, in their proportions. The formula of starch is $C_6H_{10}O_5$, while that of glucose (or grape sugar) is $C_6H_{12}O_6$. It has been found that starch can be converted into grape sugar by a simple process.

"It is called 'grape sugar,' because it is precisely the same as the sugar of the grape, as well as of all other sweet and wholesome fruits, and is the chief natural component of honey. Honey often runs as high as seventy per cent of pure glucose, and the juice of the sugar-cane, sorghum, beet, and watermelon contains a considerable percentage of it.

"The starch intended for conversion may be derived from any source that is convenient or economical, whether it be from fruits, grains, roots, or plants. In this country, corn is the most available, being not only abundant, but exceedingly rich in starch of a most pure and excellent quality. The starch being given, which is itself a most useful and universal product of nature, being a constituent of all vegetable growth, and forming a large proportion of the food that we eat, the next step is to convert it into sugar to which it is already so nearly allied.

"This is done by simply submitting the starch, in liquid form, to the action of a minute percentage of dilute sulphuric acid, which quickly produces the required change.

"As soon as this is accomplished, the acid is completely neutralized and eliminated by the addition of a little chalk, which combines with it, forming the insoluble and harmless sulphate of lime or gypsum, which in its turn is entirely removed, after settling, by drawing off the clear, supernatant saccharine liquid. This is then filtered and refined precisely as in the case of cane sugar, so that the most searching chemical test can discover no trace of the acid or any harmful impurities.

"We then have, when properly evaporated, a pure, sweet, and colorless liquid called 'glucose,' or, by further evaporation, the concentrated, white, and solid substance called 'grape sugar.'"

NOTES, QUERIES AND ANSWERS.

Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us, as come within the scope of this journal, provided they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue. Unless special instructions to the contrary accompany the query, the initials of the correspondent will be quoted at the head of each answer.

When asking for the formula of an unusual, patented, or proprietary compound, always accompany the query with any information you may already possess regarding the locality in which it is used, its use and reputed effects, in order to enable us to make inquiry without waste of time and labor. When it can conveniently be done, send also a specimen of the label used on packages of the compound.

Green's August Flowers.

V. COBLENTZ, of Springfield, Ohio, writes that the following produces a preparation very similar, if not identical:

℞ Rhubarb	360 grs.
Golden seal	90 "
Cape aloes	16 "
Peppermint lvs	120 "
Potassa carb	120 "
Capsicum	5 "
Sugar	½ lb.
Alcohol	3 oz.
Water	10 "

Macerate drugs in mixed alcohol and water, filter and add sufficient dilute alcohol through filter to make 1 pint, then dissolve the sugar.

Potassium Iodide and Spirit of Nitrous Ether.

IN the June number of NEW REMEDIES, page 164, is an article from Professor W. M. Searby on "The Decomposition of Potassium Iodide by Spirits of Nitre."

If the Professor will take ½ oz. iodide of potassium and dissolve it in 7℥ of water, then add 1℥ spirits of nitre and 2℥ of wine of colchicum, he will have a permanent solution, which will not produce any chemical changes whatever. Try it. Respectfully,

L. A. EAST.

Newberry, D. C., June 4th, 1883.

No. 1,105.—**Berberidaceæ** (E.).

Our correspondent asks us to inform him where he can find the best descriptions, if possible with illustrations, of the natural family Berberidaceæ.

In reply we would say, that there does not exist a single work which gives the botanical descriptions *with illustrations* of all the known members of this family. But the standard works of reference for botanists mentioned below give precise and detailed descriptions, and refer, in the case of each genus, to the authorities where further information may be obtained or the plates inspected.

The standard work for systematic botany at the present day, and the one most generally followed is the *Genera Plantarum* by Bentham and Hooker (the last volume of which has been issued a few months ago). You will there find the Berberidaceæ in vol. i., p. 40, etc.

The next important standard work is *Baillon, Histoire des Plantes* (almost 8 volumes out; also published in English: "History of Plants"). You will find the Berberidaceæ treated in vol. iii., 43, and there you will find quite a number of morphological and other illustrations. Baillon also has a chapter, in connection with every natural family, in which he enumerates the practical uses of the plants, and he quotes a large number of authorities.

De Candolle's Prodromus (which gives both genera and species) contains the Berberidaceæ in its *first* volume, which is now rather antiquated.

For further bibliographical information we refer you to *Pritzel, Thesaurus Literaturæ Botanicæ*, 2d edition.

All of the above you will probably find in libraries in your city; if not, you may consult our own copies when in New York.

No. 1,106.—**Brown Mixture** (L. R.).

This correspondent wants a formula for brown mixture, *dry*."

Inasmuch as the so-called "Brown Mixture" (Mistura Glycyrrhizæ Composita, U. S. Pharm.) contains important liquid ingredients which cannot be well replaced by solids, it is not feasible to prepare a compound powder of which a definite proportion is to be weighed out and mixed with a *simple* liquid until a definite volume or weight is produced. Of course, the solid constituents may be kept ready mixed, and a label attached showing how much of the mixture is to be weighed out for a definite volume of the mixture. But there is no harm in making up a sufficient quantity of the complete mixture to last for several months, at one time. The mixture keeps quite well.

No. 1,107.—**Liquor Potassii Citratis** (Iowa).

If you prefer to keep the two solutions—that of citric acid and that of bicarbonate of potassium—separately so as to mix them when wanted for use, you may do so. Indeed it would perhaps have been an advantage if the new pharmacopœia had directed this to be done, as in the case of liquor ammonii acetatis (second formula).

When dispensing, you need not weigh the solutions, but you need merely take of the bicarbonate of potassium solution an amount equal to half of the total volume of finished product wanted, and add to it, at first gradually, an *equal* volume of the citric acid solution. Finally add, if necessary, a little more citric acid solution until no more effervescence is noticed. The solution should rather be a little acid than alkaline.

No. 1,108.—**How to keep Solutions of Atropine, Morphine, etc.** (Dr. A. H. W.)

The development and growth of fungi and of bacteria in solution of atropine and other alkaloids may be arrested either by adding about 10 per cent of alcohol, or by using a saturated solution of *salicylic acid* or of *boracic acid* for preparing the alkaloidal solution. Salicylic acid requires about 450 parts of water for solution; hence a fluid ounce will not be able to take up more than 1 grain. The quantity of salicylic acid, therefore, which is administered at the same time as the alkaloid, is too insignificant to be taken into consideration. Boracic acid requires 25 parts of water for solution; one fluid ounce of a saturated solution, therefore, will contain about 18 grains (according to others, a fluid ounce will take up some 29 grains; but the latter is probably the case only during very hot weather). It may not be advisable to make solutions intended for hypodermic use with the aid of boracic acid, since the introduction of an inorganic substance is to be avoided. Of course, whenever possible, hypodermic solutions should be made fresh when wanted; yet many physicians find it necessary to keep on hand a moderate supply of ready made Magendie's solution of morphine; and for this purpose, if any preservative is needed, salicylic acid may be used.

No. 1,109.—**Butter-Coloring** (L. E.).

Both the coloring matter of turmeric and of annatto are used for tinting butter artificially. Turmeric contains an essential oil, which must be removed as much as possible, to prevent it from imparting a foreign taste to the butter. This may be done by boiling the powder with water until the oil has been dissipated as much as possible. It may, however, be completely removed (together with the fatty matter contained in the rhizome) by exhausting the powdered turmeric with disulphide of carbon. The residuary powder, after being exposed in a warm place, until it has lost every trace of the odor of the solvent, is percolated with alcohol, until the latter has taken out nearly all the coloring matter it can dissolve. From the percolate a portion of the alcohol may be recovered by distillation;

but enough alcohol should be left in the tincture to prevent it from becoming cloudy when cold. This tincture must be kept in the *dark*, and only a very little may be used on butter. It does not last long, and is particularly apt to be bleached out by light. If brought in contact with alkalies, the color will change to rust-brown.

Annatto, or annotta, or arnotta, is a coloring matter obtained from *Bixa orellana* L. It is digested with alcohol until completely disintegrated, and then heated with about 5 times its weight of olive, refined cotton-seed, or sesame oil. Or 10 parts of annatto are boiled for half an hour with 50 parts of water in which 1 part of crystallized sal soda has been dissolved. The liquid is then allowed to cool, mixed with ten parts of alcohol, thoroughly stirred, and allowed to stand for a few hours, after which the reddish-yellow liquid is filtered off. This coloring matter is very powerful, only a small portion being required. But it also has the disavantage that light soon bleaches it.

It is customary here, we believe, to prefer the annatto color for butter, and a mixture of annatto and turmeric for cheese. But the same mixture may also be used for butter.

We understand that a very superior butter-color is now made from gambier (pale catechu). As this substance can be readily obtained from wholesale druggists or dealers in dye-stuffs, you can easily make an experiment for yourself.

No. 1,110.—**Hypophosphite of Quinine** (L. B.).

This salt may be prepared by adding to a solution of 10 parts of sulphate of quinine in 100 parts of hot alcohol, a solution of 2 parts of hypophosphite of calcium in 20 parts of water. The liquid is filtered, while hot, from the precipitated sulphate of calcium, and the filtrate is evaporated, at a gentle heat, to the point of crystallization. The crystals are removed, drained in a funnel, and dried by exposure to air on filtering paper. The mother-water and the washings of the filtering paper on which the salt was dried, may be further concentrated and an additional small crop of crystals obtained. The salt is a light, white mass, consisting of fine needles, which are easily soluble in alcohol, but require 60 parts of water for solution. Its composition is: $C_{20}H_{24}N_2O_2.H_3PO_2$.

No. 1,111.—**Ammoniacal Glycyrrhizin** (W. J.)

This compound, which has been made officinal in the new U. S. Pharm., is not a definite chemical compound, at least in the form in which it is obtained by the officinal process. It contains neutral glycyrrhizate of ammonium: $(NH_4)_3C_{44}H_{60}NO_{18}$, and besides, an amorphous, *very bitter* substance, which is but little soluble in water when dissolved by itself, and also an amorphous resin. The quantity of the latter two substances is so small, however, that they do not interfere much with the sweetness of the compound.

The above, however, is by no means the sweetest compound which can be prepared from liquorice. If potassa be substituted for ammonia in its preparation, after the glycyrrhyzin has been several times precipitated by sulphuric acid, the resulting compound will mainly consist of the neutral potassium salt, $K_3C_{44}H_{60}NO_{18}$, forming a yellowish-white, amorphous mass which is easily soluble in water and in diluted alcohol. On dissolving this in hot glacial acetic acid, filtering while hot, and setting the filtrate aside, for several days, over caustic lime, a finely-crystalline *acid* potassium salt, $KC_{44}H_{62}NO_{18}$, is obtained, which *exceeds in sweetness all other known substances*. This salt swells up in cold water, is easily soluble in hot water, and only sparingly in strong alcohol.

No. 1,112.—**Incompatibles** (F. D. S.).

There is no special work published on incompatibles, so far as we know. It is not practicable to conceive every possible case that might arise in actual practice, in the preparation of prescriptions which might call for a reference to such a work. In general, a fair knowledge of chemistry is a sufficient outfit to meet difficulties as they may occur. Besides, is also necessary to have some knowledge of the therapeutic effects of drugs, since two or more substances may be incompatible therapeutically, but not chemically. Chapters on incompatibles are contained in several of the standard works on pharmacy, as, for instance, in Parrish's work, and the dispensatories enumerate, under the different titles, the more important incompatible substances which should not be combined or brought in contact with the drug in question. A paper on substances which are incompatible, because they are liable to produce inflammable or explosive mixtures, was published in this journal for 1878, p. 164 sqq.

If you will send us special and definite questions concerning combinations, the compatibility of which may be in doubt or be the subject of a discussion, we will endeavor to assist you in their solution.

No. 1,113.—**Rat-Poison** (Staten Island).

Nissen's:

Rye flour	75 parts.
Gypsum	25 "

Mineral Rat-Poisons:

1. Barium carbonate	4 parts.
Oatmeal	6 "
Sugar	6 "
Oil of anise and caraway, enough to faintly flavor.	
2. Arsenious acid, powdered	1 part.
Rotten cheese	1 "
Oatmeal	16 parts.
Moist sugar	4 "
3. Arsenious acid, powdered	4 parts.
Oatmeal or wheat flour	48 "
Indigo, powdered	½ part.
Suet, melted	40 parts.
Oil of anise	10 drops
for every pound of flour used.	

Miller's:

Fresh oatmeal	16 oz.
Nux vomica, powdered	1 oz.
Rat-scent	5 or 6 drops.

As *Rat-scents*, any of the following may be used:

a. Tincture of asafœtida	¼ oz.
Oil of anise	½ oz.
b. Powdered cantharides macerated in French brandy.	

Other Rat-Exterminating Means.

Sponge.

Dip some medium coarse sponge in salt-water, and dry it. Compress it, and cut it in pieces of about the size of a pea. Then make a mixture of three eggs and three spoonfuls of flour, dip the pieces of sponge therein, and roast them in a frying pan containing very hot butter. The sponge, of course, swells up in the stomach of the rat, and may be made to act more promptly by exposing water near the place where the bait is placed.

Squills.

Cut dried squills into small slices, and roast them in hot butter. Rats are very fond of this, but soon die after eating it.

No. 1,114.—**Nucta** (E. M.).

This is, according to Mr. Tscheppe, simply water perfumed with a little oil of lemon. It is heralded forth as a specific for acne and pimples; from the above, you will be able to form your own judgment.

No. 1,115.—**Ammoniacal Copper Test for Carbon Disulphide** (H. G. D.).

This test is simply an aqueous solution of ammonio-sulphate of copper, prepared by dissolving 1 part of crystallized sulphate of copper in 3 parts of distilled water, and adding enough water of ammonia completely to dissolve the precipitate first formed.

This reagent which must be kept in a glass-stoppered bottle, serves as a reagent for carbon disulphide, with which it produces a violet-brown to dark-reddish-brown color or precipitate. The presence of more than about five per cent of carbon disulphide in essential oil of mustard

may thereby be discovered. In an alcoholic solution of genuine oil of mustard, the reagent produces only a blue precipitate (of ammonio-sulphate of copper).

No. 1,116.—**Cement for Metallic Letters upon Glass** (E. J. R.).

The usual mixture of resin (4 parts) and yellow wax (1 part), which is used for attaching glass-labels to shop-bottles may be used. Or, thick shellac varnish. Or, a recently prepared mixture of 1 part of copal varnish, 3 parts of boiled linseed oil, 3 parts of oxide of lead, and 1 part of white lead.

No. 1,117.—**Safety Matches for Outdoor Use** (Trav. Agent).

The best and most reliable safety matches for outdoor use, which cannot be extinguished by wind, are those made by the American Fusee Co., Limited, of Erie, Pa. The New York agent is Geo. B. Eddy, 243 Broadway, New York.

No. 1,118.— **Colored Water of Ammonia** (Inquirer).

Water of ammonia which has become colored by organic substances, such as pieces of cork that have fallen in, etc., can be thoroughly restored only by redistillation. It is possible, in many cases, to remove the obnoxious color, by the cautious addition of permanganate of potassium; yet the products of the decomposition remain, and the product could not be used with safety for internal or other nice purposes. Previous to redistillation, which is a very simple operation, the colored water of ammonia may be mixed with enough permanganate to give it a decided tint. This will help to destroy any volatile organic matter which might otherwise come over with the water.

No. 1,119.—**Dr. Sage's Catarrh Remedy** (O. M.).

According to Schaedler, this is a mixture of 20 parts of common salt, 1 part of camphor, and 1 part of carbolic acid. It is to be dissolved in water, and injected or sniffed up into the nose.

No. 1,120.—**Analysis of the Kaiserquelle** (Dr. R. S. W.).

The "Kaiserquelle is a hot, sulphurous mineral-water at Aix-La-Chapelle, in Rhenish Prussia.

According to Liebig, the water of the Kaiserquelle contains in 10,000 gr., or 10 kilogr., *i. e.*, about 10 liters:

	Gr.
Chloride of sodium	26,161
Bromide of sodium	0,036
Iodide of sodium	0,005
Sulphide of sodium	0,136
Sulphate of sodium	2,836
Sulphate of potassium	1,527
Carbonate of sodium	6,449
Carbonate of lithium	0,029
Carbonate of magnesium	0,506
Carbonate of calcium	1,579
Carbonate of strontium	0,002
Carbonate of iron (ferrous)	0,095
Silica	0,661
Organic matter	0,769
Total	40,792
Free and parly combined carbonic acid	5,000

According to Bunsen, the Thermal Water contains in 10 liters the following gaseous elements at a pressure of 760 millim. at 0° Cels., which are disengaged by boiling:

	Cubic Cen.
Carbonic acid gas	1,269.4
Nitrogen	127.8
Oxygen	17.6
Light carburetted hydrogen	5.2
Total	1,420.0

No. 1,121.—**Universal Putz-Pomade** (G. M. G.).

Our correspondent would like to know the composition of the "Universal Putz-Pomade" [universal detergent] made by Adalbert Vogt & Co., of Berlin, and sold also in this country. He is quite enthusiastic about its extraordinary cleansing powers for metallic substances, and thinks it a god-send to every druggist. We do not know the composition; perhaps some of our readers do, in which case we have no doubt that they will supply the information. It is quite important in the case of such detergents to have, at least, a general notion of their composition, so as to avoid injury to substances which might be incompatible with them. If the cleansing effect depends on mechanical use (friction) alone, the harm likely to result is much inferior to that caused by such agents as act entirely or partly chemically.

Incidentally, we may add that, according to A. Viedt, of Braunschweig, the finely-powdered ash of the boghead coal is the best cleaning agent for metals. It contains about forty-two per cent of silica, forty per cent of alumina, and one per cent of ferric oxide, besides other constituents.

No. 1,122.—**Freezing of Alcohol** (M. S. S.).

Alcohol is selected for the filling of thermometers which are exposed to very low temperatures, since even the greatest cold which is likely to occur naturally will not affect its fluidity or mobility. But even absolute alcohol can assume the *solid* state, as has lately been proven, and has long been inferred from its property of gradually becoming thicker and oily when exposed to great cold. Alcohol diluted with water will, of course, freeze at comparatively lesser degrees of cold, depending altogether on the percentage of water it contains.

The fact that absolute alcohol can be frozen has been published lately by Prof. S. v. Wroblewski and Dr. K. Olszewski, of the University of Kasan. We learn from an abstract of their paper in the *Chemiker Zeitung* that one of the above authors has recently constructed an apparatus for high pressures, with which comparatively large volumes of gas may be subjected to the pressure of several hundred atmospheres. This apparatus was used for a repetition of the experiments of Cailletet, viz., to liquefy oxygen at — 105° C. (— 157° F.). During the trials, it was observed that, by evaporating ethylene in vacuo, a temperature as low as — 136° C. (— 213° F.) could be obtained, and at this temperature, oxygen became liquid with great facility. The temperatures were measured with the hydrogen thermometer.

Carbon disulphide solidifies at — 116° C. (— 177° F.), absolute alcohol becomes viscid at — 129° C. (— 200° F.), and *freezes* at about — 130.5° C. (— 203° F.)

No. 1,123.—**Protagon** (Dr. R. S. P.).

This name was given by Prof. Liebreich to a peculiar substance extracted from animal brains by warm alcohol. It has never yet been obtained of a definite composition, and is either a very unstable body or a mixture of lecithin, cerebrin, and other substances not yet examined. A short heating of protagon with baryta water suffices to convert it into cerebrin and into the decomposition products of lecithin, namely, glycerophosphoric, stearic, palmitic, and oleic acids, and cholin.

Gamgee and Blankenhorn prepare protagon by digesting cleaned and comminuted ox brains for twelve to eighteen hours in a large incubator, at 45° C., with eighty-five per cent alcohol, filtering while hot, and treating the residue with fresh portions of alcohol in the same manner. The filtrates, when cooled to 0° C., separate a copious precipitate, which is collected on a filter, then shaken with ether in order to remove cholesterin and other ether-soluble substances, next pressed between blotting paper, dried, then again moistened with water, suspended in alcohol, dissolved in it at the temperature of 45° C., again separated by exposure to cold, and the process continued and repeated, as above detailed, until a substance of as uniform composition as possible is obtained.

We do not know whether the substance sold in the market as "protagon" is prepared by the above or any similar process.

No. 1,124.—**Bleaching Sponges.**

Several correspondents of the *Pharmaceutische Zeitung*

communicate methods for bleaching sponges, all of which we have been acquainted with ourselves, and which we can recommend as quite satisfactory :

1. First clean, wash, and squeeze out the sponges; then dip them into a two-per-cent solution of permanganate of potassium. Here they become quite brown (from separated manganic oxide); after ten minutes, they are taken out, washed in water, again well pressed, and then dipped into a two-per-cent solution of oxalic acid [we prefer diluted sulphuric (1 : 20) or diluted hydrochloric acid (1 : 15)], in which they become perfectly white. Success mainly depends on the soaking in the permanganate solution; if they are macerated too short a time, they do not become thoroughly white; if too long, they are apt to become rotten (Dr. Siemens).

2. First clean the sponges by immersing them in diluted hydrochloric acid. Then soak them in the bleaching liquid, composed of hyposulphite of sodium, one part, water, twelve parts, and hydrochloric acid two parts. After some time, they are removed and well washed. To the last wash-water a little glycerin is added in order to preserve the sponges soft. The liquid is best pressed out by passing the sponges through a clothes-wringer.

3. Toilet sponges, which have been in use, often become peculiarly slimy, fatty, and almost useless, owing to some action of the soap. Mere washing in distilled water does not remove the difficulty. It may be overcome by using fused chloride of calcium. The sponge is pressed as much as possible, placed on a plate, the powdered chloride of calcium sprinkled upon it, and allowed to deliquesce upon the sponge. After about half an hour, the sponge may be washed in water and dried, when it will become white (M. v. Valta).

Though the above processes furnish a satisfactory product, yet the following combination and modification of two of the above processes, which was devised by Mr. John Borham, and has been in use in Bellevue Hospital for a considerable time, will be found to work better still:

Soak the sponges, previously deprived of sand and dirt by beating and washing, in a one-per-cent solution of permanganate of potassium. Then remove them, wash them thoroughly with water, and press out the water. Next put them into a solution of one-half pound of hyposulphite of sodium in one gallon of water, to which one ounce of oxalic acid has been added, and leave them in the solution for fifteen minutes. Finally, take them out, and wash them thoroughly.

By this treatment, the sponges are rendered perfectly white. Many sponges contain a more or less dark-colored, brownish core. If treated only with permanganate and acid, the core is either not bleached at all, or if it has been somewhat bleached, the tint is apt to grow again darker. By the above modification, every portion of the sponge is rendered white, and remains so.

No. 1,125.—**Picro-Carmine for Double-Staining Microscopic Preparations.**

According to Prof. Frey, of Zurich, the most accurate recipe for this preparation is that of C. Baber, namely:

Carmine	1 *gm.* =	15 grains.
Water of ammonia	4 *cc.*	1 fl. ʒ
Water	200 *gm.*	6¾ fl. ʒ

Mix and add

Picric acid, powdered	5 *gm.*	75 grains.

Shake and decant, so that the undissolved excess of picric acid will be left behind. The fluid, after having stood for several days, with occasional shaking, is exposed to the air in a saucer for several weeks until dried. The red powder is dissolved in water in the proportion of two parts to one hundred, and after several days filtered through a double thickness of filter paper. The fluid should now be yellowish-red, with no smell of ammonia. A drop on white filter paper, when dried, makes a yellow, red-bordered spot. A few drops of carbolic acid prevent decomposition of the fluid. Washing in distilled water draws the picric acid out of the preparation; glycerin, on the contrary, does not. For mounting, Baber recommends a mixture of ten drops of glycerin with an equal quantity of water, to which one drop of the picro-carmine solution has been added.

Further information on picro-carmine and its use in staining will be found in *Geo. E. Davis' Practical Microscopy*, London, 1882, p. 263.

No. 1,126.—**Diastase** (E. S.).

Diastase, in a form suitable for keeping in stock, may be prepared in the following manner: Upon 2 lbs. of coarsely ground, air-dried malt, 4 quarts of lukewarm water are poured, in which 75 grains of bicarbonate of sodium are dissolved, the whole digested for two hours at a temperature of 30° to 40° C. (86–104° F.), then expressed, and the expressed liquid heated to 65° C. (149° F.), so as to coagulate the albumen. It is strained while hot, the clear liquid mixed with 1 oz. of purified animal charcoal, again filtered after two hours, and then mixed with twice its volume of alcohol. After three or four hours, the precipitate is collected, mixed with 75 grains of powdered sugar of milk, spread, in a thin layer, upon plates of glass, and dried at a temperature not exceeding 60° C. (140° F.). The dry mass is then rubbed to powder and mixed with so much milk-sugar as may be required to have the product contain equal quantities by weight of diastase and milk-sugar. It should be kept in a well-stopped vial.

No. 1,127.—**Coltsfoot Syrup** (U.)

This preparation has at one time been official in the pharmacopœia of Wurtemberg, also in the French Codex. The respective formulæ are:

1. Coltsfoot flowers, dried	1 part
Boiling water	6 parts
Sugar	8 "

Digest the coltsfoot flowers for several hours with the boiling water and strain, adding, if necessary, a little water through the strainer, to obtain 5 parts of strained liquid. In this dissolve the sugar, heat to boiling and strain again.

2. Coltsfoot flowers, fresh	1 part
Water at 45° C.	3 parts
Boiling water	2 "
Sugar	q. s.

Pour 3 parts of water at a temperature of 45° C. (113° F.) upon the flowers (and let the whole macerate for some time); then strain with gentle pressure. Treat the residue with 2 parts of boiling water on the water-bath for twelve hours, then strain through linen with pressure. To the strained liquid add twice its weight of sugar, and make a syrup at a gentle heat.

No. 1,128.—**Machine for Packing Powders** (W. M.).

" Can you inform me of the name and address of a maker of machines for filling boxes (such as violet powder is put up in) and then wrapping the boxes up?"

Can any one favor us with an answer to the above? We would also refer to the machine illustrated in our last number, page 165.—Ed. N. R.

Queries from Exchanges.

Scientific American.

Under the captivating name of **Oriental Barometer,** there is sold an artificial flower, stained with some chemical substance which changes its color with the varying hygrometric state of the air; turning pink or red with much moisture, and blue when it is dry.

Solution of cobalt chloride is the color used.

Staining Maple Gray.—Expose a quantity of old iron, or, what is better, the borings or turnings, in any convenient vessel, and from time to time sprinkle them with muriatic acid, diluted with four times its quantity of water, till they are very thickly covered with rust; then to every 6 pounds add 1 gallon of water in which has been dissolved 2 ounces potassium carbonate; lay the wood in the boiler, and cover it with this liquid; let it boil for two or three hours till well-soaked; then for every gallon of liquor add a quarter of a pound of green sulphate of iron, and keep the whole at a moderate temperature till the dye has sufficiently penetrated.

Staining Cherry in Imitation of Old Mahogany.—Digest log-wood chips in vinegar or acetic acid for twenty-for hours or more. When ready to use, heat the solution, then dip the wood until suitable color is obtained.

[Another staining solution much used by cabinet-makers for this purpose is a solution of bichromate of potassium. This is also used to give new mahogany the dark, rich color of old wood.—ED. NEW REM.]

Colored Inks for Rubber Stamps.—

Blue Ink:

Indigo in fine powder	10 parts.
Gum arabic	4 "
Glycerin	4 "
Water	3 "

Dissolve the gum in water, mix it with the glycerin, and then triturate it thoroughly in a mortar with the indigo until a thoroughly homogeneous mixture is obtained.

For *black ink* use nigrosin in less quantity, and add dextrin to stiffen the mixture.

To make Manila Paper Thoroughly Waterproof in the Sheet, and Yet Keep it Pliable.—Melt in 10 pints of hot water 30 ounces of glue, gelatin, or size, and 3 ounces of gum arabic. In another 30 pints of hot water melt 2 ounces of soap and 4 pounds of alum. Mix both liquids together in one pot. This constitutes compound No. 1. In another pot heat a half a gallon of benzol and 1 gallon of paraffin, and melt in it 24 ounces of resin; let them boil until they attain a moderate degree of consistence. [There is no need of boiling. This solution should be made on a water-bath, and away from any lights or fire.—ED. N. R.] To these materials, resin, oil, and copal or mastic varnish may, in some cases, be added. This is composition No. 2. First dip the article to be waterproofed into the composition No. 1, in a heated state, and then dry it. Next apply No. 2 in a cooled state, with a brush, or in any other convenient manner. Care should be taken to avoid igniting the benzol, *as it is highly inflammable.*

Process of Manufacturing Gelatin Sheets, such as Are Used for Coloring the Flame of the Calcium Light.—Dissolve fine glue or isinglass in water, so that the solution, when cold, may be consistent. Pour it hot on a plate of glass (previously warmed with steam and slightly greased) fitted in a metallic frame whose edges are just as high as the wafer should be thick. Lay on the surface a second glass plate, also hot and greased, so as to touch every point of the gelatine while resting on the edges of the frame. By its pressure the thin cake is rendered uniform. When the glass plates have cooled, the gelatin will be solid and may be removed. It can then be cut into discs by punches, etc. It can, of course, be colored by adding suitable coloring material, aniline colors, for instance.

Fine Common Black Ink is prepared, according to the old receipts, from tannin or extract of galls and a protosalt of iron, in connection with gum—thus:

Blue nutgalls, powdered	7 pounds.
Sulphate of iron (copperas)	1 pound.
Mucilage of gum arabic	q.s.
Water	q.s.
Oil of cloves	a few drops.

The tannin of the galls having been extracted by boiling with a small quantity of the water, and the liquid extract allowed to settle and cool, it is then mixed with the iron salt previously dissolved in a sufficient quantity of cold water, and the mixture agitated with gum water. The quantity of gum used is usually about one-third the weight of the galls employed; the quantity of water about one gallon to the pound of galls. The ink is rendered darker when first written with by the addition of a small quantity of sal ammoniac, one ounce or so the gallon. Logwood extract is also sometimes employed for a similar purpose. For full color, body, and fluidity we generally prefer one of the aniline preparations. In these aniline black is the basis of the color. In preparing the ink the darkest shade of soluble nigrosine is usually chosen. It is first made into a thick paste by grinding or triturating it in a mortar with a small quantity of hot water. This paste is then mixed with a suitable quantity of warm water (not too much) and strained through a silk bag, when it is ready for use. It has, when reduced with considerable water, a bluish color; this may be corrected by very slightly acidifying it with sulphuric acid and adding a small quantity of ordinary gall iron ink or a strong aqueous decoction of alizarine. [This last is a mistake. Many years ago some ink manufacturers put on the market an ink which flowed from the pen with a pale greenish color, becoming deep black after a while. The name "alizarine ink" was given to it hap-hazard. There never was any alizarine (which is a *red* dye) used in its manufacture. Any ink which is *acid* by the presence of acetic acid, and therefore contains the ferrous tannate *in solution*, is an "alizarine ink." Such inks are improved by the addition of indigo-carmine.—ED. N. R.]

To Make a Filter with a wine barrel, procure a piece of fine brass wire cloth of a size sufficient to make a partition across the barrel. Support this wire-cloth with a coarser wire-cloth under it, and also a light frame of oak, to keep the wire cloth from sagging. Fill in upon the wire-cloth about three inches in depth of clear, sharp sand, then two inches of charcoal broken finely, but no dust. Then on the charcoal four inches of clear, sharp sand. Fill up the barrel with water, and draw from the bottom.

To Deodorize Alcohol the following is recommended: To each gallon add an aqueous solution of four to eight grains of potassium permanganate, shake well, and add, after five minutes, as much chloride of lime, previously rubbed with a little water. Filter the liquor after several hours, and set it aside for a few days. The alcohol will then have lost its chlorine smell and acquired a peculiar flavor, which, however, depends on the proportions of the permanganate and chloride of lime used. If then distilled, the alcohol may be used as the finest cologne spirit.

Cocoanut Hair-Oil.—

Cocoanut oil	½ pt.
Castor oil	½ "
Alcohol	6 "
Slippery elm bark	1 oz.
Water	4 "
Oil of bergamot	1 "
Oil of lemon	½ "
Oil of pimento	¼ "
Oil of almonds	1 dr.

The cocoanut oil is mixed with the castor oil, and the alcohol mixed slowly with them at a slight heat. The elm bark in coarse powder is dissolved in the water and strained, and mixed by agitation with the rest. Lastly it is filtered, perfumed, and colored with a little tincture of gamboge.

A Simple Process for making Yeast for Fermenting Beers.—Brewer's yeast is prepared as follows: 72 pounds unkilned malt and a handful of hops are gradually stirred in a clean tub containing 7 gallons of water of 170° Fah.; and to this 5½ gallons water of 200° are added. The tub is then covered tightly and left quiet. After some time it is cooled rapidly. This is accomplished by setting in cans filled with cold water. When the temperature of the mash has reached 70°, the tub is covered again and allowed to stand for some twelve hours longer, when 1½ gallons fresh

beer yeast are to be stirred in. After another twelve hours have elapsed, pierce a hole in the layer formed by the husks of the malt and dip 3½ gallons of the liquor beneath, then stir the whole up and dip 1¼ gallons from it (husks and liquor). This is the mother leaven from which yeast can be generated all the year round by using it in the way described instead of the ordinary beer leaven. To the remainder in the tub add 5 gallons wort of 90°, and make use of it within two hours. The mother yeast also must be used the same day for fermenting another portion.

CHEMIST AND DRUGGIST.

Cherry Tooth-Paste.—Boil briskly 1 oz. of potassium carbonate and 1 oz. of powdered cochineal in a pint of water till reduced to 12 or 14 oz. When cold, add cream of tartar, 1 oz.; alum, ½ oz.; glycerin, 2 oz.; and water sufficient to make 16 oz. of filtered solution. Add 4 oz. of honey, and set aside for a few days to see if fermentation occurs. Carefully mix the liquid with 2 lbs. of prepared chalk, 1¼ oz. of orris powder, and ¼ oz. of cassia powder.

Guaiacum Mixture.—A correspondent asks: "How would you prepare the following so as to make a perfect mixture:

Gum guaiacum	60 grains.
Iodide of potassium	60 "
Tincture of colchicum seed	2 drachms.
Cinnamon water,	
Syrup, of each equal parts to complete	4 ounces."

A tolerable mixture can probably be obtained by dissolving the guaiacum in two or three times its weight of strong alcohol, and adding it, with constant stirring in a mortar, to all the other ingredients mixed together. Should a perfect solution be desired, it might possibly be formed by combining the guaiacum resin with caustic soda or potassa, no incompatibility existing between alkalies and the other components of the mixture. But such liberty with a prescription cannot be taken without consent of the prescriber.

Mucilage of Acacia.—J. D. requires "a handy method of speedily producing from a quart to a gallon of mucilage of acacia without using hot water—a formula the product of which will keep well."

Regarding the preparing and keeping of mucilage of acacia, we give the following on the authority of R. Rother: "The decomposition of mucilage of acacia, when once begun, cannot be checked or even retarded, but it can be prevented by a sufficiency of glycerin if this be present before any change could supervene. This is only secured by mixing the glycerin with the water *before* its addition to the gum. Next in importance to the solvent is the manner in which the solution of the gum is effected. This operation can be most promptly and thoroughly performed by placing the original pieces of the gum into an appropriately-sized bottle, and adding the mixture of glycerin and water. The bottle is then securely corked, the whole well shaken, and the bottle laid down on its side in a horizontal position; after ten or fifteen minutes the layer of agglutinated gum is moved into a vertical position by revolving the bottle; after the column has subsided the bottle is further revolved in the same direction. Having thus moved the bottle three or four times, during the interval of about twelve hours complete solution has taken place. The proportion of glycerin to be used is one in eight of the product." We do not know that we can improve on these directions, but we may point out that heat should never be employed in effecting solution of the gum, as it hastens decomposition.

To Prevent the Hair Falling Off.—We have been informed that the Linimentum Crinale recommended in *Squire's Companion* is one of the best preparations for this purpose. Its formula is cantharidin, 1 grain; acetic ether, ¼ oz.; dissolve, and add rectified spirit, 3 oz.; castor oil, 1 oz.; oil of lavender, 15 minims. Some prescribers order the addition of more spirit. The application to be made with a small sponge every third day. Squire says after applying it a few times the head should be washed, or the application may accumulate and cause too much irritation.

Castor Oil Emulsion.—A correspondent sends the following as a good formula for castor oil emulsion, which he has frequently dispensed; it renders the oil tasteless, and keeps well:

Ol. ricini	℥ vi.
Glycerini	℥ vi.
Tinct. aurantii	℥ ij.
Tinct. senegæ	℥ ss.
Aq. vel aq. cinnam. ad	℥ iij.

Dose, one tablespoonful every night.

Liq. Cocci.—A correspondent in Jamaica recommends the following:

	fl. oz.
1. Carmine	1
2. Solution of potassa	1½
4. Syrup	8
5. Alcohol	3
3. Distilled water	8

Macerate 1 and 2, add 3, 4, and 5, and filter.

Potassium Permanganate Pills.—Thomas Fox says: I have several times made pills of the above, using as an excipient resin cerate, one-quarter of the weight of the potass. permang. ordered. This leaves nothing to be desired, and the pills could be either pearl or tolu coated immediately.

DRUGGIST'S CIRCULAR.

Blanc Grass or **Rachel White.**—Mix the finest zinc-white with just enough purified lard to make a stiff paste. It may be left a dead white or colored pink with carmine. It is applied to the face by rubbing it on with a finger, rice powder being afterwards dusted over it with a "puff." Chiefly used by actors in "making up."

Purification of Clay for Permanganate of Potassium Pills.—Mix any kind of clay with water to form a "milk." Allow the sand, gravel, and coarser particles to settle; then strain, to separate light impurities, such as chips of wood, etc., and then allow it to stand until the clay has subsided. Pour off the water, and collect and dry the sediment for use.

To Make Bitters in Quantities.—When large quantities of liquid preparations are to be made, it is best to avoid filtration of the finished product, by either taking care that the component parts be all clear, or filtering such as may be turbid, before mixing them with the rest. If the alcoholic strength of the bitters is to be twenty-five per cent, the roots and barks should be exhausted by percolation or maceration with alcohol of no higher degree; otherwise the tincture will precipitate on being mixed with a weaker menstruum, and the whole finished product will require filtration. Of all things, charcoal or bone-black should not be used in the filters, because they absorb large portions of the flavoring and bitter principles. Ordinary paper filters, or a layer of clean sand over a piece of Canton flannel will answer.

Coloring Essence of Lemon.—Annatto or turmeric may be used, but the product should be protected from sunlight which both destroys the color and injures the flavor. [See article on *Ghe Che*, on page 191, and also next number.—ED. NEW REM.]

Syrup of Cubebs.—WM. F. SCHMIDT, of Des Moines, Iowa, says: Take cubeb, in No. 30 powder, ℥ ij. (Troy), percolate with water 8 parts, and alcohol 1 part, enough until fl. ℥ viij. of tincture are obtained. In this dissolve 12 ozs. (avoir.) of granulated sugar, without heat, and strain. Variations in strength can be made by changing the quantity of drug.

Cotton Seed Oil in Linseed Oil.—A simple practical test is to lay, with a clean brush, a thin coat of the suspected oil on a piece of glass. Pure linseed oil, after a short time of exposure to the air, becomes dry and hard like a varnish. When cotton seed oil is present, the oil remains sticky for several weeks. Another way is to place a specimen in a test tube immersed in a mixture of ice and salt, side by side with a thermometer. As cotton seed oil begins to congeal near 32° F., while linseed oil remains still fluid at 0° F., the lowest temperature obtainable with the freezing mixture in question, the appearance of the oil in the test tube will disclose the adulteration, and, to a certain extent, its proportion.

AMERICAN BOTTLER.

Ginger Ale.—A correspondent writes:

"I have tried all the different extracts, but they all get thick or deposit a sediment in a few days. I am satisfied that the trouble is in handling the syrup after the extract is put in. I have tried a sand filter to no purpose. I got some syrup already prepared from another bottler, and it works all right, but he will not tell me his method, so I know that it is not caused by the water I use. I read your directions in the February number, but I do not know how heavy to make the syrup. You say 'prepare a heavy syrup, 32° Baumé, and reduce to 25°.' Now, what is 32° Baumé? Also, where can I get the material to filter with, and how much salicylic acid to the gallon of syrup?"

ANS.—In making the simple syrup, use only the best *granulated* sugar, then add the ginger ale extract, and to each gallon of the syrup thus prepared add one ounce of finely-powdered carbonate of magnesia; at this stage rouse the whole well, and throw into canton flannel or twilled cotton filtering bag, same as represented in the illustration. Repeat pouring the syrup into the filter until it loses *all* signs of turbidity. Having accomplished this, add the solution of salicylic acid, see below (which should be previously filtered through paper), but this must not be done until *after* filtration of the *syrup*. We repeat the assertion that should you follow this treatment to the letter your ginger-ale will cause you no bother in the future, provided the materials used are of good quality.

Baumé's saccharometer is the standard in this country for gauging the *density* of syrup.

Thirty-two degrees Baumé is a much heavier syrup than 26°. [It is equal to a specific gravity of 1.286.] Two drams of salicylic acid (previously dissolved in six drachms of *absolute* alcohol) to each gallon of syrup will amply suffice.

N. B.—Lemon soda syrup, etc., subjected to the above "magnesia treatment," will insure an article of *great* brilliancy.

Pictures for Drug Stores.

THE apothecary who wishes to render his place of business attractive, or provide means for entertaining those who await the compounding of prescriptions, have usually depended upon the latest newspaper, the allurements of patent-medicine almanacks and "chromos;" a tempting display of toilet articles; or a show-case filled with a miscellaneous collection of things of all kinds kept by druggists. Sometimes an aquarium with gold-fish, miniature turtles, and incipient eels will serve for a time to interest the waiting customer, or the city directory will supply valuable information of unimpeachable morality, if not of absorbing interest. The dexterous manipulation of the soda-water apparatus by the junior assistant, and the gyrations of an ingenious tumbler-washer may also be depended upon for fixing a share of

alteration. But even these are not inexhaustible.

William Wood & Co. have for a few years past published a series of highly artistic mezzotypes, especially adapted for physicians' offices and libraries, some of which might quite as well be used to increase the æsthetic attractions of a pharmacy. Two of this series are roughly shown in the adjoining outline cuts.

In one, a grandmother is exerting her power of persuasion upon a lad who, with some former experience still fresh in his memory, declines the proffered dose, and is obstinately deaf to all assurances that it is nice to take. In the other, the family doctor appears to have been appealed to after vain efforts on the part of the mother to administer "a spoonful every hour" of some mixture in which an agreeable flavor has been overlooked in the effort of the prescriber. The bluff old man is showing the way it can be done when one knows how, and the mother smilingly awaits the result of a battle in which victory may not be on the side of strength.

Both pictures are 19 by 24 inches in size, and sell for two dollars each.

Law in New Jersey Against Smoking.—A recent law in New Jersey declares: "That hereafter no person or persons in this State shall knowingly sell any cigarette or cigarettes, or tobacco in any of its forms, to any minor under the age of sixteen years."

BIBLIOGRAPHY.

AN INTRODUCTION TO THE STUDY OF ORGANIC CHEMISTRY. By ADOLPH PINNER, Ph.D., Professor of Chemistry in the University of Berlin. Translated and Revised from the Fifth German Edition by Peter T. Austen, Ph.D., F.C.S., Professor of Analytical and Applied Chemistry in Rutgers College and the New Jersey State Scientific School. 8vo, New-York: John Wiley & Sons, 1883. Pp. xix., 403,

WE have repeatedly had occasion to read over certain chapters of organic chemistry in our copy of the original German edition of Professor Pinner's work, and have been agreeably struck with the clearness of expression, the facility of presenting apparently difficult subjects, and the lucid exposition of the relationship existing between different groups or members of the several organic series. There are a great many modern college text-books on organic chemistry, particularly in German, and it is difficult to say which is the best among the dozen or so of first-class excellence—since each of them has special merits of its own—but that Professor Pinner's work ranks among the very best, there can be no doubt whatever.

Professor Austen, then, has done a real service to the growing generation of chemists of this country by giving us a good translation of the work under discussion. It will be found acceptable to all teachers who take the slight trouble of examining the plan upon which the work is constructed. The different sections, fatty series, carbhydrates (this is the way the translator puts it instead of carbohydrates), uric acid, aromatic compounds, and proximate organic principles, are treated in proportion as their importance seems to require, or as they are usually taught in schools and colleges. An appendix contains methods for determining the composition of organic substances, estimation of vapor-density, and other subjects relating to chemical physics or analysis which could not well be grouped in the text.

THE VEGETABLE MATERIA MEDICA OF WESTERN INDIA. By W. DYMOCK, Surgeon-Major, Bombay Army; Principal Medical Storekeeper to Government; Late Professor of Materia Medica, Grant College, Bombay, etc. 8vo. Bombay and London (Trübner & Co., Ludgate Hill). Part I., pp. 1–160. (To be completed in 4 parts, at 2 rupees each.)—Received from the author.

PROFESSOR DYMOCK'S contributions to the history of eastern drugs have been numerous and valuable. Some years ago, the author published an extensive series of papers on the subject of East Indian materia medica in the *London Pharmaceutical Journal*, from which we gave a number of abstracts. Prof. Dymock has been specially favored by circumstances which have enabled him to clear up the history of many obscure drugs, to verify and study their appearance and properties on the spot, to trace up their origin and commercial features, and to give an account from native literary sources regarding the therapeutic or other practical uses which have been ascribed to the drugs by the the eastern nations.

The work before us comprises, in part, the substance of his previous papers systematically arranged, enlarged, and supplemented with information acquired since that time. It also contains much new matter not before treated of. While confined to drugs of which only a limited number have been introduced into general medical practice here or in Europe, yet it will be the means of drawing much greater attention to various important remedies that richly deserve study at the hands of competent observers. The work is exceedingly interesting, sharing this property (which is not common in works on materia medica) with the "Pharmacographia" and Flückiger's "Pharmakognosie."

The general arrangement is in accordance with the usual succession of natural orders in the natural system, beginning with the ranunculaceæ. Each single article begins with the title, for which the Latin botanical name is chosen, then follow the synonyms in the vernaculars, and then follow such subdivisions as these: 1st, history, uses, etc.; 2d, description; 3d, microscopic structure; 4th, chemical composition; 5th, commerce.

We have no doubt that the index will be as full as possible, including even the vernacular names. It would also be of interest to many, if the author were to append some literary notes on the native works from which he has drawn a portion of his information.

For an extract from the work we refer to page 200 of this number.

THE SCHOOL OF SALERNUM. An historical Sketch of Mediæval Medicine. By H. E. HANDERSON, A.M., M.D. (Read before the Medical Society of the County of New York, February 25th, 1878.) 8vo, New York, 1883, pp. 60.

THIS pamphlet has been in our hands for some time, but, as we did not want to merely acknowledge its receipt, we laid it temporarily aside until we could find leisure to read it more carefully. We have been well repaid for this, for it is a thoroughly scholarly essay on the history of the celebrated school at Salerno, and bears testimony to the great range of literature which the author has laid under contribution.

BEITRÄGE ZUR CHEMIE DES HOLZGEWEBES. Inaugural Dissertation von NICOLAI SCHUPPE. 8vo, Dorpat, 1882.

BEITRÄGE ZUR GERICHTLICHEN CHEMIE. Von G. DRAGENDORFF. [Untersuchungen aus dem Pharmaceutischen Institut der Universität Dorpat.] 8vo, St. Petersburg, 1882.

Both the above were received from Professor George Dragendorff.

PREIS-VERZEICHNISS XI ÜBER MIKROSKOPE UND DAZU GEHÖRIGE HÜLFS-APPARATE. 8vo, Berlin, 1882.

AUSZUG AUS DEM ZOLLTARIFE FÜR PRODUCTE DER CHEMISCHEN UND VERWANDTEN INDUSTRIE. Von Amerika, dem Deutschen Zollgebiete, England, Frankreich, Italien, Oesterreich-Ungarn, Russland und d. Schweiz. Nach amtlichen Quellen von D. G. KRAUSE, Herausg. d. Chemiker Zeitung. 8vo, Cöthen, 1883.

A VERY useful little pamphlet. It is to be regretted, however, that the author was unaware of the tariff reform agitation in the United States, which resulted in a change of many of the old rates. (See our last number.)

HANDBOOK OF THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE THROAT, NOSE, AND NASO-PHARYNX. By CARL SEILER, M.D., etc. Second Edition. Thoroughly revised and greatly enlarged. With 77 illustrations. Philadelphia: Henry C. Lea's Son & Co., 1883, 1 p. 295, small 8vo.

THE additions to this second edition are largely in the chapters relating to the diseases of the nasal passages, a field in which there has been the most progress of late. Those who desire a condensed treatise on this subject will find Dr. Seiler's work fresh, clear, readable, and reliable.

Bromide of Zinc.

A SOLUTION (20 per cent) of this salt may be extemporized by first rubbing 106 parts of bromide of potassium and 127 parts of sulphate of zinc separately to fine powders, then mix both with 100 parts of distilled water, to a smooth mixture. After half an hour add 500 parts of alcohol, transfer to a small filter, previously wetted with alcohol and wash with alcohol to a filtrate of 800 to 900 parts. Evaporate to 500 parts, which will represent 100 parts of bromide of zinc. A *syrup* (1 per cent) is made by mixing 5 parts of the above solution with 95 parts of simple syrup.—*Hager*.

NEW YORK STATE PHARMACEUTICAL ASSOCIATION.

THE Fifth Annual Meeting of the New York State Pharmaceutical Association was called to order at Ithaca, on Tuesday, June 12th, by the President of the Association, A. B. Huested, M.D., of Albany.

After prayer by the Rev. Mr. Hamlin, of Ithaca, Hon. J. H. Selkreg welcomed the Association on behalf of the President of the village, the local druggists, and the people of the community.

Of Ithaca and its surroundings he spoke as follows: "We are told by those who visit us that we live in a locality of unsurpassed natural scenery. Our giant hills are bathed in sunbeams which touch and seem to cover them as with a film of golden glory. On every hand, in this direction and that, are waterfalls of unrivalled beauty, and whereever the eye rests, a panorama is spread out of exquisite loveliness. Lake, field, and forest make up the picture, and if our residents fail duly to appreciate these attractions as others do, it is doubtless because seen hourly; they have grown into our existence, and therefore pass unheeded. If others insist, we might well challenge comparison, for we certainly need not shrink from such a test."

Mr. F. K. Sweet, of Lockport, responded to the address of welcome. He was glad that pharmacy was now recognized as a profession, the members of which were the most powerful auxiliaries to and co-operators with the medical profession. The two should work harmoniously and effectively in the high mission intrusted to them.

PRESIDENT'S ADDRESS.

The address of President Huested was largely of the nature of a "message" from an executive officer to the corresponding law-making body. It was substantially as follows:

Though pharmacy law has occupied much of the attention of this Association since its organization, the end is not yet. Most of us think that dealing in medicine should be properly regulated by law. The public are unanimously of the same opinion. They would be surprised were the existing laws generally known. We have heretofore failed to secure better legislation because of active opposition, indifference, or lack of proper effort on the part of pharmacists.

The true grounds on which to base a pharmacy law are that it is for the benefit of the public, by securing those known to be competent to serve the public in its medicinal wants, and for the benefit of pharmacy by limiting its practice to those who by education are fitted therefor. The work properly falls upon us; and others would impose unjust burdens upon us.

I recommend that we continue to work to secure a State pharmacy law. Our present draft includes all essential features. It should be condensed so that it would not present so formidable an aspect. It would then better attract the support of honest legislators. Such legal counsel should be employed to aid us, that the main object of the law (the securing of proper persons for the handling, care, and sale of medicines) is not defeated.

The two amendments to our constitution submitted for action should be adopted, especially the one to secure more time for the reading and discussion of matters of pharmaceutical interest in open session, and to delegate to committees mere routine business.

The efforts of the Georgia State Pharmaceutical Association to secure the removal of the tax upon the alcohol used in medicine should be encouraged by concentrated effort throughout the State and country.

The reports of officers and committees will show, I believe, that the association is in a healthy state.

Attention is particularly called to the report of the committee on adulterations. This committee should be a standing one, to the members of which specimens of supposed adulterated drugs might be sent for examination. If qualified men will undertake such work, they will render great service to our profession.

I would suggest that in all places where there are five or more members, local agents be appointed to distribute copies of the proceedings and to collect and remit the annual dues. Proper agents would save much money in fees which are not now forwarded because of the aversion to inclosing small amounts.

Since our last meeting, much that concerns us as pharmacists has occurred.

Matters of trade interest have, in some localities, occupied more attention than they deserve, or would have received, had pharmacy been what it should be—more a profession, and less a merchandise business. How it is that we have come to include, even in popular districts, all manner of wares that certainly are not medicines, and do not require pharmaceutical skill to handle, is more than I can say. The time was when pharmacists did not deal in such an array of articles foreign to medicine, though they could have done so with more reason than now, because they had more leisure. Pharmaceutical preparations have greatly increased in number, but we have allowed their preparation to fall into other hands. Relief from this embarrassing state of things can come only through our own exertions. The elixir, pill, and emulsion manufacturer may claim that purity and acceptability is not to be had except by manufacturing on a large scale, and by the employment of expert workmen; yet no one would assert that these preparations, after undergoing precipitation, mould, or chemical change with age, are as valuable as medicines recently made.

Let us use the time and money devoted to goods outside of our line to acquire facility in pharmaceutical manipulation, and to buy necessary appliances. By such action, we shall acquire the confidence and support of our physicians.

Patent medicines have increased so in number and variety that the druggist who deals in them is often perplexed to know how to act respecting them. There are many causes which have led to the adding of material foreign to pharmacy proper to our stocks of goods. Foremost, doubtless, is the desire for gain; other causes are want of love and natural aptitude for our profession, and apathy in fostering the necessary education therefor. If these foreign goods are not a benefit to pharmacy proper, they must be an actual detriment to it. If so, better set our face against their further increase than quietly take in everything that comes along in which there is money, and shove our drugs in a little out-of-the-way corner to moulder and deteriorate that we may get gain by the sale of goods put up by others. May we not with profit consider whether we are not allowing ourselves to become mainly dealers, reducing our professional acquirements to a minimum, and making the getting of money the sole object in life?

The most important event of the year, to us, has been the completion and publication of the sixth revision of the U. S. Pharmacopœia. No previous revision has attracted such critical and wide-spread attention. By many the change from measure to weight, in making liquid preparations, is thought to be a vexatious change productive, to say the least, of no advantage. As a member of the Convention of 1880, I worked and voted against this change, believing that it would cause confusion and extra labor. I thought the proportion existing between a drug and a liquid preparation of the same could be more readily calculated by the old than by the new methods. However, I have strictly followed the new law, and have come to prefer it to the old. We are just as much bound to follow the new Pharmacopœia as we have been to respect any of the former revisions. Greater accuracy is certainly secured by weighing than by measuring. Moreover, the advocates of measure are not silenced, and should experience fail to commend the change, measure could be restored. My own conviction is, that there will be no return to measure.

REPORTS.

The Secretary, Mr. Clay W. Holmes, of Elmira, reported that, of 591 members, the total number at the adjournment of the last annual meeting, 3 had died during the year, leaving 588 names upon the roll. Of these, some had failed for three years to pay dues, and, according to

the constitution, had forfeited their membership. Their names, however, still appeared on the association books and printed proceedings. He wished to know what action to take regarding them.

The Treasurer, Mr. Chas. H. Butler, of Oswego, reported that the balance in the treasury at the last report was $816.14. The total receipts up to June 11th, '83, were $1,013. The total disbursements of the year were $889, leaving a balance of $940.14.

The Chairman of the Executive Committee, Mr. F. L. Norton, of Delhi, reported that the committee had revised the minutes of the last annual meeting, and had had 1,000 copies printed at a cost of $200. They had changed the time of meeting to an earlier date, and had audited bills to the amount of $889.

Dr. J. H. Eaton, of Syracuse, Messrs. L. E. Nicot, of Brooklyn, and J. L. Corwin, of Marathon, were announced as the committee to review the recommendations made in the President's address, and to report on the same.

Second Session.

Messrs. H. A. Cassebeer, of New York, C. H. Haskin, of Rochester, and Charles Hubbard, of Syracuse, were appointed as a committee on exhibits.

President Huested (also Chairman of the Legislative Committee) reported for that committee as follows:

The committee had held joint session with similar committees of New York and Kings County, but no unanimity of action was possible. The committee of this Association were able to agree on the bill proposed last year by making a vital change therein, allowing any person to open or own a pharmacy, even if not a competent pharmacist, provided he put a competent pharmacist in charge. A bill was prepared excepting from its provisions New-York and Kings Counties, where objection was made to the proposed law. The bill suffered change at the hands of the Committee on Public Health in the Legislature. The penalties were all stricken out and violations made misdemeanors. The annual registration clause was dropped. The modified bill was reported favorably, but could not be reached before the final adjournment of the Legislature. A pharmacy bill for Kings County was passed. One for Erie County, much like the State bill, failed to pass. From appearances, and slight hints not sufficiently definite to warrant positive statements, it is probable that some influential parties are opposed to any form of State law, and will continue to exert all possible influence against one.

The Penal Code has several sections affecting the sale of drugs and poisons—sections 401, 402, 403, 404, and 405.

There is also an "act to prevent the adulteration of food and drugs."

A bill to compel manufacturers of patent medicines to print the recipe of the article upon the label or wrapper failed to become a law. The existing laws do not practically protect the public, and they are unjust to the pharmacist. They require that all poisons, or poisonous substances sold at retail, in all parts of the State excepting New York and Kings Counties, must not only be marked poison, but registered, and a witness had to the sale. Poisons are not defined, nor is any classification made whereby the sale only of the more potent ones should be registered and witnessed. The qualifications of those permitted to handle poisons, etc., are poorly defined. The laws are not enforced; their existence even is unknown to many. Not until some evil-disposed person makes the victim aware of their existence will the necessity be appreciated of a fair and just law regulating the practice of pharmacy and the sale of poisons. Combined efforts for drafting a simple but effective law (excluding New-York and Kings Counties in its operation, should that seem best), should be persisted in. Such a law would confine the care and sale of medicines to competent persons, would more readily pass the Legislature, and would be more certainly enforced.

The following officers were elected for the ensuing year:

President, F. K. Sweet, Lockport; *First Vice-President*, Clark L. Otis, Binghamton; *Second Vice-President*, Thomas J. MacMahan, New York City; *Third Vice-President*, Judson B. Todd, Ithaca; *Secretary*, Clay W. Holmes, Elmira; *Treasurer*, Charles H. Butler, Oswego; *Executive Committee*, W. A. Rogers, Middletown; W. L. Dubois, Catskill; and Frank L. Norton, Delhi.

Delegates to the American Pharmaceutical Association: Frank L. Norton, Delhi; Aaron Sager, Cortland; H. W. Atwood, New York City; J. Rieffenstahl, Buffalo; and G. M. Kenyon, Syracuse.

Several members from New York and Brooklyn nominated to serve on this delegation preferred the election of members from other parts of the State. The Metropolis would be well represented at the meeting of the American Association, and any of these members could serve should there be a necessity.

Third Session.

The committee to which the President's address had been referred, reported through its chairman, Dr. Eaton, of Syracuse.

The following resolutions of the committee were adopted:

1. That the Committee on Pharmacy Law be authorized to employ such legal counsel as may be necessary to prepare such a pharmacy bill (excepting in its provisions New York and Kings Counties) as may meet the wants of the Association, the expense to be borne by the Association.

2. That the Treasurer be instructed to notify all members in arrears for three years, and all who have not yet paid their initiation fee, that their names will be striken from the rolls at the next annual meeting, if they do not sooner settle.

3. That hereafter no application for membership be considered unless the fee accompany it.

4. That the President of this Association appoint five delegates to the Retail Drug Association, to convene in Washington in September.

5. That the officers of this Association be empowered to take such action, in order to remove the tax on the alcohol used in medicine, as may be necessary.

6. That the Committee on Adulterations be made a standing committee. (Consideration postponed until 1884).

7. That the President appoint such local agents, for the collection and forwarding of dues, as the Treasurer suggest.

Article VII. of the Constitution was amended to read as follows: "The annual meeting shall be held at such time and place as the Association from year to year may select."

REPORT OF COMMITTEE ON TRADE INTERESTS.

Prof. P. W. Bedford, of New York, read the report of the Committee on Trade Interests, of which the following is an abstract:

In sympathy with the general healthy tone of business, the drug trade during the year has been unusually large. The most noteworthy feature of our market has been the extremely low prices reached by some of the most staple goods, and especially the products of Peruvian bark and opium. Several questions of great importance to the trade have excited general interest among dealers, the most prominent being that of co-operation in sustaining prices. Despite all that has been said, the problem still seems difficult of solution. While the rebate contract system has met with fair success in maintaining prices between the manufacturer and wholesale dealer, the question of protection for the retail trade is still unanswered. Several instances, more or less local in nature, show that it *is* practical to secure such a combination of retail dealers as will prevent ruinous cutting of prices. Where such combinations have been tried, they have met with general approval. These illustrations seem in a practical way to show the positive benefits of such organizations to protect the retail apothecary. When the intelligent retailer is convinced that he can sell as many goods at fair prices as he can by giving a portion of his legitimate profits to his customers, there is little in the way of a common agreement for the benefit of all.

Of the various methods proposed for organization, the following seems to be the simplest and most practical, and therefore the best. Let the retail druggists throughout the State form county associations which, by uniting, will finally become auxiliary to a central organization; let this latter make a price-list, and secure the co-operation of manufacturers and wholesale dealers in maintaining it. In due time, organizations in other States will naturally be invited to combine with ours, thus rendering the system national. We suggest the appointment of a committee by this Association representing the various parts of the State to take immediate steps to carry out the plan proposed, with such improvements as their wisdom may suggest.

The subject of "retail rebate" and the "coupon plan" have been discussed by this committee. Their preference for local co-operation does not prevent them from seeing admirable features in the "retail rebate" plan. In fact, the recommendation we have made embraces "retail rebate." For where dealers have refused to join organizations to maintain fair prices, they have been prevented from making purchases on advantageous terms, and have finally been compelled, in self-defense, to unite with their neighbors.

We also recommend that delegates be sent from this Association to the Convention of Retail Druggists, to be held in Washington in September, and that such delegates be instructed to assure that body that whatever plan may be adopted will receive the hearty co-operation of the druggists of this State.

Mr. H. B. Parsons, of New York City, next presented an able and interesting paper on behalf of the Committee on Adulterations. He was listened to with marked attention throughout the reading of the paper. [See page 194.]

In answer to the query propounded at the last session. "What is the best method for the manufacture of fluid extract and syrup of senega to avoid gelatinization?" Mr. Clay W. Holmes, Secretary of the Association, and Prof. P. W. Bedford, read papers. [See pp. 195, 196.]

Prof. Bedford also read a paper on "Poison Sale and Poison Law."

Closing Session.

The final session was held on Thursday morning, when the officers-elect for the ensuing year were installed in their positions.

It was decided to hold the next annual meeting in New York City, June 10th, 1884. Prof. P. W. Bedford was made Local Secretary, and Messrs. George J. Seabury, of New York, and E. A. Sayre, of Brooklyn, were appointed as a committee of entertainment.

After a long discussion of trade interests, the following resolution was adopted:

Resolved, That a committee of one from each county of the State be appointed to secure an organization of the retail druggists, wholesalers, and manufacturers in his county for the purpose of maintaining the prices of proprietary articles, and that when such organization shall be effected, the fact shall be reported to the committee on trade interests. When two-thirds or more of the counties have reported such organization, it shall be the duty of the chairman of the committee on trade interests to issue a call for a meeting at some convenient point for the purpose of perfecting a State organization.

COMMITTEES.

The following gentlemen constitute the several standing Committees for the ensuing year:

Legislative.—Messrs. F. K. Sweet, Lockport; A. B. Huested, Albany; J. Rieffenstahl, Buffalo; C. H. Gaus, Albany; T. J. MacMahan, New York City.

Trade interests.—Messrs. T. L. Corwin, Marathon; C. W. Snow, Syracuse; George Weaver, Lockport.

Pharmacy and Queries.—Messrs. P. W. Bedford, New York City; L. E. Nicot, Brooklyn; S. A. Newman, Rochester.

Adulterations.—H. B. Parsons, New York City; R. K. Smither, Buffalo; C. H. Butler, Oswego.

Delegates to National Convention of Retail Druggists.—Messrs. Clay W. Holmes, Elmira; E. A. Sayre, Brooklyn; H. B. Napier, Dryden; J. L. Belden, Geddes; A. Sager, Cortland. To *Virginia:* T. J. MacMahan, New York City. To *Massachusetts:* A. B. Huested, Albany; L. E. Nicot, Brooklyn. To *Connecticut:* C. Z. Otis, Binghamton; H. W. Atwood, New York City; E. Post, Brooklyn. To *New Jersey:* Dr. G. M. Baker, Brooklyn. To *Ohio:* Dr. J. H. Eaton, Syracuse.

At the several sessions of the Association the following seventy-two gentlemen were added to the roll of members.

NEW MEMBERS.

George F. Dudley, Owego; W. H. Farnham, Avon; D. A. Comfort, Canasteo; J. C. Autenpaugh, Syracuse; C. P. Pettit, Elmira; F. R. Burdick, Syracuse; F. A. St. Clain, Albion; F. Wiley, Oswego; J. J. Marsden, Waterloo; W. A. Kirkham, Newark; J. F. Pierson, Lockport; G. H. Whitney, Oswego; Jesse W. Zimmerman, Lockport; C. P. Cullen, Waterloo; A. A. Flanders, Jamestown, J. McCoig, Canasteo; E. G. Brown, Waterville; E. H. Nelson, Rochester; G. W. Flood, Highland Falls; August Maine, Utica; A. F. Paige, Rochester; B. F. Smith, Salamanca; F. S. Eastmead, Poughkeepsie; Schuyler Grant, Ithaka; C. S. Welch, Ithaca; Wm. E. Newton, Tioga Center; T. F. Delano, Ithaca; Robert Austin, Painted Post; Geo. W. Davenport, Painted Post; Victor L. Cole, Corning; M. W. Palmer, Newark; Wm. Blake, Tioga Center; Otis Beach, Owego; W. G. Sutfin, Canaserago; Frank Pulford, Marathon; Chas. C. Hill, Ithaca; Anson B. Holmes, Horseheads; Homer H. Hill, Ithaca; Chas. H. Schultz, Bath; Chas. W. Hinsdale, Hudson; B. N. Baker, Rhinebeck; J. F. Cahill, Johnston; C. J. Pettit, Fort Plain; A. M. Stone, Hudson; W. H. Griffith, New York; R. P. Meade, Brooklyn; W. J. Draper, Lockport; O. E. Dudley, New York; Geo. F. Sullard, Franklin; Chester C. Platt Ludlowville; Henry L. Adams, Auburn; Peter Smith, Syracuse; O. J. Bryan; George E. Sykes; P. W. Spofford; Wm. A. Dean; Wm. Cuer; Chas. H. White; D. W. Burdick; H. L. Haskins; John Hurley; Frank C. Joslyn; George E. Putney; E. A. Starkey; J. C. Gauntlett; A. B. Brooks; A. H. Todd; G. W. Slaughter; F. H. Coggeshall; W. M. Harrington; F. G. Brown; A. Cullen; C. C. Platt.

ENTERTAINMENTS.

On Wednesday afternoon, the members of the Association and the gentlemen in charge of the exhibits joined in a very enjoyable excursion down Cayuga Lake to Sheldrake, whence, after feasting, they returned to Ithaca.

On Thursday afternoon, the members visited Cornell University and the Fiske mansion, and made a tour of Fall Creek Glen—well worthy of, but little known to, fame.

EXHIBITION.

The display of exhibits was the finest ever made at the annual gatherings of the Association. The exhibition was made in Journal Hall, very convenient to Library Hall, where the Association held its sessions. The largest display was made by W. H. Schieffelin & Co., of New York, who showed a large and comprehensive line of manufactured chemicals and pharmaceutical preparations. Among these we noted a full line of purified salts for dispensing purposes, fine, assayed scale preparations, a very fine sample of bisulphate of quinine, and a full line of oleates, abstracts, powdered and fluid extracts. All the new preparations of the last revision of the United States Pharmacopœia were shown in this collection. One of the most novel preparations was concentrated nitrous ether, from which the spirit of nitrous ether of the Pharmacopœia may be made extemporaneously. We also noted the albums containing photographs, most carefully taken, of medical plants. The display of soluble coated pills was the finest in the hall.

McKesson and Robbins' exhibit was admirable. They showed large, bulk preparations of the sulphates of quinia, cinchonidia, and of other alkaloids of cinchona bark. There was a line of cinchona bark preparations packed in cans with the assay of each given on its label. These as-

says showed them to contain from three per cent to six per cent of alkaloids and from two per cent to two and three-quarter per cent of quinia. Among the other things, there were the abstracts and oleates of the new Pharmacopœia, fine iron scales, blue-mass, purified asafœtida, Maltese-cross cod-liver oil, Chinese rhubarb in caddies and original cases, solid and fluid extracts, nearly two hundred samples of crude gums, and full lines of fruit juices, fruit syrups, and concentrated fruit essences. Their sponges and chamois skins deserve mention.

John Wyeth & Bro., of Philadelphia, had a fine display of fluid extracts, elixirs, and syrups, purified saccharated pepsin, compressed pills, Fehling's test tablets, compressed hypodermic tablets of various formulæ, chemically pure boric acid in an impalpable powder, granular effervescing salts, cod-liver oil, and Lawton's absorbent cotton.

Among other preparations in the exhibit of Tarrant & Co. were the abstracts, oleates, solutions, soluble citrate of iron and quinine, and extracts of the last Pharmacopœia.

Seabury & Johnson, of New York, presented a very fine exhibit of the goods they handle—plasters in great variety, cotton, lint, etc.,

Powers & Weightman, of Philadelphia, exhibited a line of chemicals, about five hundred in number. To the casual observer, the most notable were the large, brilliant masses of crystalline substances.

Wm. R. Warner & Co. were represented chiefly by Dr. Alfred A. Page. They also had a large number of specimens of their pills.

Lazell, Marsh & Gardiner exhibited no drugs or chemicals; their display of perfumes was very full.

Mr. Charles A. Wells, a retail druggist of Saratoga Springs, exhibited a simple but ingenious pill-coating machine.

The Torsion Balance and Scale Company, of Cincinnati, displayed scales which ingeniously employ a torsion wire in place of a knife edge. It is claimed that these are more delicate and durable than scales where the bearings are on knife edges.

Mr. B. F. Sparrow, of Boston, Mass., exhibit his centrifugal mixer for powders, pastes, and emulsions.

M. H. Dillenbeck, of Lyons, N. Y., displayed among other things a full line of essential oils.

Gillam's Sons, of Philadelphia, showed their labels, printed and gummed, and their embossed envelopes.

A fine line of Lundborg's perfumes was shown by Young, Ladd & Coffin, of New York City.

Toilet waters, soaps, and other articles were exhibited Solon Palmer, of New York City.

John M. Maris & Co., of New York, showed a new percolator and very many other articles in glassware used by druggists.

Whitall, Tatum & Co. also exhibited glassware in great variety.

F. F. Houghton & Co., of Philadelphia, had specimens of petrolatum for use as a base for ointments.

The Binghamton Oil Refining Company displayed a great variety of their goods to which they give the general name petrolina.

The Lake Keuka Wine Company displayed a line of their wines which they claim are pure and purchasable at moderate prices.

Virginia State Pharmaceutical Association.—At the second annual meeting of this Association, held at Norfolk, Va., on the 15th of May, the following were elected for the ensuing year: *President*, C. A. Santos; *Vice-Presidents*, Hugh Blair, C. B. Fleet, Edgar Warfield, A. Buff; *Secretary*, Ed. R. Beckwith; *Treasurer*, F. H. Masi; *Corresponding Secretary*, T. Roberts Baker; *Executive Committee*, T. F. Knock, Polk Miller, Edgar Taylor; *Delegates to the Amer. Pharm. Assoc.*, C. P. Benson, J. A. Wells, O. T. Mingie, T. R. Baker, J. W. Thomas; *Delegates to the Retail Druggists' Association*, H. A. Wiseman, C. L. Wright, F. H. Masi, E. C. Jackson, C. Lumsden; *Honorary Members*, Professors Mallett, of the University of Virginia, Maisch, of Philadelphia, Bedford, of New York, Allfield, of London, and Mr. George J. Seabury, of New York.

Papers and addresses were presented by Mayor Lamb, T. R. Baker (the retiring president); Dr. Stark, of Petersburg (on the metric system); Mr. Foster, of New-York (on Pepsin and Pancreatin); J. W. Thomas, Jr., of Norfolk (on the Progress of Pharmacy); Hugh Blair, of Richmond (on Fermentation); C. E. Thomas, of Norfolk (on the Medicinal Plants and Herbs of Tide-Water Virginia); Mr. Fleet, of Lynchburg (on Olive Oil); Dr. Starke (on Tincture of Cypripedium); T. H. Hancock of Baltimore (on the nature of his exhibit).

The secretary reported a membership of 172. Sixty new delegates were in attendance, and 51 new members were admitted. The treasurer reported a balance of $304.94. The next meeting will be held on the 15th of May next, at Lynchburg, when a special committee will report upon some plan whereby pharmacies may be kept open on Sundays for the sale only of such medicines as are imperatively needed. A committee was also appointed to secure, if possible, the enactment of a pharmacy law.

Closing the session was a supper given by the pharmacists of Norfolk and Portsmouth, and during the meeting an extensive exhibition was held; Messrs. F. H. Masi, J. W. Thomas, Jr., E. C. Jackson, and H. Nietz being chiefly instrumental in providing arrangements for the meeting and the entertainment of guests.

Circassian Pomade (*Circassian Cream*).

Oil of almonds, expressed	4 parts
Lard	2 "
Benzoin pomade	2 "
Rose pomade (French)	1 part
Alkanet	q. s.
Oil of rose	q. s.

Melt the lard, pomades, and almond oil together on the water-bath, color them to the proper tint with alkanet, then remove the heat, stir until nearly cold, and add 8 to 10 drops of oil of rose for each pound of product.

Benzoin Pomade is thus prepared:

Fresh beef tallow	20 parts
Fresh lard	10 "
Benzoin	6 "

Melt the tallow and lard to a temperature of about 85° C. (185° F.), place in the melted mass the benzoin (in coarse pieces, tied in a muslin bag), and macerate for several hours, keeping the vessel well covered. Then strain and let cool.

Cucumber Pomade or Cream.

Oil of almonds, expressed	40 parts
Oil of sesame	3 "
Wax	2 "
Spermaceti	3 "
Cucumber juice	35 "
Oil of neroli	1/6 part

The cucumber juice is obtained by pressing the cucumbers, raising the juice quickly to boiling, and filtering it through linen. In order to better preserve the aroma of cucumbers, it is advisable to prepare so-called "cucumber oil" by macerating cucumbers in the finest quality of olive oil for twenty-four hours, and then using this in place of the almond oil. By adding freshly-expressed cucumber juice to fresh lard melted on the water-bath, the aroma may likewise be transferred to the lard which separates from the watery liquid on cooling. The aroma may further be imparted to oils or fat by so-called tincture or essence of cucumbers, which is prepared by digesting sliced cucumbers with a quantity of deodorized alcohol sufficient to cover them, and distilling the alcohol off after 24 hours.

Baking Powder.

Tartaric acid	6 ounces.
Bicarbonate of sodium	8 "
Flour	32 "

Mix.

ITEMS.

American Pharmaceutical Association.—The directors of the Smithsonian Institution have granted to the American Pharmaceutical Association the use of the lecture room in the new Museum building for the next annual meeting, with ample space for the exhibition. As it is expected that the attendance at the meeting will be exceptionally large, and the exhibition of more than usual interest and extent, it has been thought best to assign space in the exhibition room in the order in which applications are received.

The wall space will be very desirable, as the windows are seven feet above the floor, allowing room for four feet of shelving on the top of the tables, with the light from above. The tables will be three feet wide, and exhibitors who may wish to have shelving made to set on top of the same against the wall, can have their orders attended to by sending to the undersigned a precise description of what they desire, giving number and width of shelves, whether step-shaped or straight up against the wall, etc.

This suggestion is made in view of the fact that valuable time may be saved in fitting up the exhibition by having matters of this kind attended to beforehand, while the work can no doubt be done better and cheaper to the individual exhibitors if contracted for together.

Any further information will be cheerfully furnished by

CHAS. BECKER, *Local Secretary*,
1367 Thirty-second st., N. W.

The Ohio Pharmaceutical Association.—In addition to the list of officers elected at the recent meeting in Cleveland, the following committees were chosen: *Trade Interests:* R.G. Williams, Alliance; M. D. Fulton, Bucyrus; C. H. Morgan, Cleveland. *Papers and Queries:* N. Rosenwasser, Cleveland; H. Wrede, Cincinnati; V. Coblentz, Springfield. *Pharmacy Laws:* J. A. Nipgen, Chillicothe· I. N. Reed, Toledo; T. L. N. Grove, Cincinnati; C. Ludlow, Springfield; C. Huston, Columbus.

About 400 of the 500 members were in attendance, and the treasurer announced a cash balance of $913.15. The next meeting will be held in Cincinnati, and Mr. William J. Martin will act as Local Secretary.

Wisconsin Pharmaceutical Association.—The next meeting of this Association will be held at La Crosse, on the 14th, 15th, and 16th of August. Those who wish to exhibit goods should at once address the Secretary, Mr. E. B. Heimstreet, at Janesville, Wis., stating the nature of the wares and who will be there in charge of them.

Welcome to the Pharmaceutists.

The Ithaca Daily Journal, in its issue of June 12th, publishes the following adaptation from the *Albany Journal* as a greeting to the N. Y. State Pharmaceutical Association.

Hail and welcome to the druggists,
Pharmacists, apothecaries,
Pill-compounders, pain-confounders,
Potion-mixers, toothache-fixers,
Or whate'er they best are known as,
Who to-day meet in convention,
And to-morrow and the next day
Tarry in this Forest-City.
Come they from the very borders
Of this State long called the Empire;
From the cities and the hamlets;
From the vales and from the highlands;
Some with trunks and some with gripsacks;
Some by rail and some by steamboat.
May their stay be full of pleasure,
And their profit without measure.
May they always catch a transfer
When the hills they wish to conquer;
May no quick indisposition—
Outgrowth of the heat, the climate,
Or the milky city water—
Call for use of salts of Epsom,
Or for sweet Jamaica ginger.
May no falls upon the pavement
Cause abrasions or contusions
That will call for smartweed extract
Or for liniments or plasters.
May their meetings for discussion
Be devoid of all percussion.
But in case of disagreement
Over details of the business,
Stock in trade, or scale of prices,
May some one the Oil of Jacob
Empty on the troubled waters;
Or the face of Lydia Pinkham,
Topped by spit-curls and a back-comb,
To the scene straightway be conjured.
It will surely heal contention.
In the talks of pills and plasters,
Acids, aconite and clysters,
Pills and potions, washes, notions,
And the thousand things that nature,
Like a child, has learned to cry for,
May some tender-hearted member
Broach a simple plan or system
Whereby children, with a bottle,
Sent for castor-oil or catnip
To relieve the baby's colic,
May not home return with caustic,
Or with creosote or camphor,
Or with boneset or with boxwood,
Or with buchu or with burdock,
Or with indigo or tansy,
Or with motherwort or mustard,
Or some patent oil or tincture
That is foreign to the order.
May some one in the convention
Let his brethren know 'tis needed,—
By a public which has suffered
For a lack of concentration,—
That a drug-store should encourage
Trade to come straight to its counters;
That the sale of stamps for postage
And of brush-brooms for the toilet,
Is a step in a direction
That doth please the weary shopper;
That the drug-trade can increased be
By the steady introduction
Of the shoe brush and the hair-pin,
Of the ice-box and the fruit-can,
Of the stove and baby's high-chair,
Of the bird-cage and the chromo,
Of the garden-rake and coal-hod,
Of canned fruits and meats and tin-ware,
Of neat bric-a-brac and dry-goods,
And the thousand little trinkets
That the ill as well as well need.
Hints are these in all good nature
Given to to-day's convention.

Poudre de Riz.—Government analysts in France have examined some of the numerous preparations sold under this name, and find that none of them are *contaminated* with rice-flour, but many are composed of carbonate of lime, or prepared chalk, subnitrate of bismuth with chalk or magnesia, and still more, and indeed the most popular consist of oxide of zinc mixed with a little powdered orris-root.

Massachusetts College of Pharmacy.—At the annual meeting of the Massachusetts College of Pharmacy, held Monday, June 4th, the following resolution was unanimously passed:

Whereas, By the recent publication of a bill proposed to be offered to the Legislature this college has been placed in a false position regarding the proposed pharmacy law, therefore,

Resolved, That this College would announce to the pharmacists of Massachusetts, and to the public at large that its work is simply that of an educational institution, and that its policy is, and always has been one that keeps it entirely aloof from all matters of a political nature.

The following officers were elected for the ensuing year: *President*, Henry Canning; *Vice-Presidents*, William W. Bartlet, Henry R. Appleton; *Recording Sec.*, William F. Sawyer; *Corr. Sec.*, Charles C. Williams; *Treasurer*, Samuel A. D. Sheppard; *Auditor*, Linus D. Drury; *Trustees*, Solomon Carter, Freeman H. Butler, Silas S. Bradford, George F. Dinsmore, E. Waldo Cutler, Benjamin F. Stacy, Frank M. Loring, Edward G. Frothingham; *Registrar*, Bennett F. Davenport.

The Late Prof. Benjamin Howard Rand.

We copy from the *College and Clinical Record* the above portrait of the late Professor of Chemistry in Jefferson Medical College, a notice of whose death was published in our issue of March last.

Professor J. U. Lloyd.—It affords us great pleasure to announce that the chair of Pharmacy at the Cincinnati College of Pharmacy will be occupied by Prof. J. U. Lloyd, well-known throughout the country as an able writer and an authority in all matters relating to practical pharmacy and pharmaceutical chemistry.

Bureau of Professional Inquiry.—Professor Charles Froebel, late Professor of Analytical Chemistry at the College of Pharmacy of the City of New York, has organized a *Bureau of Professional Inquiry* at 658 Broadway, New York, the principal feature of which is to consist in the sale of information on any subject whatever. Whoever may be in need of information on scientific, technical, educational, or other subjects, and be at a loss how to obtain it, or how to obtain the materials for acquiring it, or any one who may wish to have commissions executed, analyses made, experts provided, in fact, any one who would like to have some thoroughly reliable agent who will execute his wishes with judgment, discretion, and care, will no doubt find it to his advantage to consult our esteemed friend Professor Froebel, to whom we wish all possible success in this enterprise.

Dose Measurements in France.—At a recent meeting of the Société de Pharmacie, convened specially to consider a report which was intended to serve as a preliminary chapter to the forthcoming editon of the codex, it was decided that instead of attempting to define a tablesponful as a measure of weight or of volume, it would be preferable to propose to medical men to agree that when they prescribe a tablespoonful they are to be understood to order a quantity equal to fifteen grams of distilled water.

At the same meeting the size of the normal *compte-goutte* was defined that the diameter of the tube at the point from which the drop falls should measure three millimetres exactly. An opinion was also expressed that the practice of measuring certain very volatile liquids by drops should be abandoned.

Production of Sassafras Oil in Virginia.—In Buckingham county, Va., are forty distilleries engaged in making sassafras oil, within an area of ten to fifteen square miles. Each mill employs three men, and consumes daily 80,000 pounds of the root, extracting fifty gallons of the oil (about one-half per cent).

Doctor Dover, the originator of "Dover's Powder," was a friend and probably pupil of the great Sydenham. He commenced practice in Bristol, where having made some money, he longed to make more. The Roll of the College of Physicians tells us that he joined with some merchants in fitting out two privateers for the South Seas, in one of which, the "Duke," he himself sailed from Bristol, August 2d, 1708. On the passage out they touched at the Island of Juan Fernandez, where Dover on the 2d February, 1709, found Alexander Selkirk, who had been alone on the island for four years and four months, and whom Dover brought away in the "Duke." In the April following, Dover took Ginaguil, a city or town of Peru, by storm. In December, 1709, the two privateers took a large and valuable prize, a ship of twenty guns and one hundred and ninety men, in which Dover removed from the "Duke," taking Alexander Selkirk with him as master, and finally reaching England in October, 1711. After this cruise, Dr. Dover removed to London, where his practice soon became great. His patients, and the apothecaries who wished to consult him, addressed their letters to the Jerusalem coffee house, where at certain hours of the day he received most of his patients.

PHARM. CALENDAR FOR JULY.

N. B.—The officers of Societies, Colleges of Pharmacy, Pharm. Associations, etc., will oblige us by forwarding schedules of their meetings, lists of officers, and any changes that may be desirable.

Date.	Society Meetings.
Mon. 2d.	Erie Co. Pharm. Asso.—Monthly Meeting at Buffalo.
	Pittsburg Coll. Pharm.—Quarterly Meeting.
	National Coll. Pharm.
Tues. 3d.	Davenport (Ia.) Pharm. Assoc.—Quarterly Meeting.
	St. Joseph (Missouri) Pharm. Assoc.
Wed. 4th.	Rhode Island Pharm. Asso.—Quarterly Meet.
Thurs. 5th.	Louisville Coll. Pharm.—Pharm. Meet.
Friday 6th.	Cleveland Pharm. Assoc.—Bi-monthly Meet.
	American Chem. Soc.—Meets in New York.
Tues. 10th.	Kings Co. Pharm. Soc.—Meets in B'klyn.
Wed. 11th.	New York Board of Pharmacy.—Monthly Meeting.
Thurs. 12th.	Newark Pharm. Asso.—Monthly Meeting.
	California Pharm. Soc. and Coll. of Pharm.—Quarterly Meeting.
	Philadelphia Coll. Pharm.—Alumni and Pharm. Meeting.
	Maryland Coll. Pharm.—Semi-annual Meet.
	New York German Apoth. Soc. Semi-annual Meeting.
	Lancaster Co. (Pa.) Pharm. Assoc.—Meeting.
Tues. 17th.	St. Louis College Pharm.—Alumni Meeting.
Tues. 24th.	St. Joseph (Missouri) Pharm. Assoc.—Meet.
	Boston Druggists' Assoc.—Monthly Meeting.
Thurs. 26th.	Kings Co. Board of Pharm.—Meets in Bklyn.

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PHARM. CALENDAR FOR JULY.

Meetings of Boards of Trustees, Colleges of Pharmacy, Examining Boards, etc., will often be by-law meetings. Societies whose meetings fall on days of others, and any changes of date.

Date.	Society Meetings.
Mon. 2d.	Erie Co. Pharm. Asso.—Month[illegible] Meeting at Buffalo.
	Pittsburg Coll. Pharm.—[illegible]ly Meeting.
	National Coll. Pharm.
Tues. 3d.	Davenport (Ia.) Pharm. Assoc.—Quarterly Meeting.
	St. Joseph (Mo.) Pharm. Assoc.
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	Lancaster Co. (Pa.) Pharm. Assoc.—Meeting.
Tues. 17th.	St. Louis College Pharm.—Annual Meeting.
Thurs. 19th.	St. Joseph (Mo.) Pharm. [illegible]—Meet.
Thurs. 26th.	Boston Druggists' Assoc.—Monthly Meeting.
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DREW PEARSON.